

THE LIVING AGE.

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THE BROOK.

A LITTLE Brook went singing
Through the flowery lea,
"On, onward must I hasten
The Silver Lake to see."

The little Brook runs merrily,
For nothing will she stay;
Through stones and pebbles winding,
She speeds her sparkling way.

The little Brook impatiently
Creeps through the bushes green,
And through the tall reed-forests
Where the sedge-bird's nest is seen.

The little Brook runs merrily,
For nothing doth she stay,
Till she comes where the speckled fishes
Pursue their noiseless play.

"Stop, little Brook!" they call to her,
"Nor sweep us on with thee;
Flow gently through our shady pool
Beneath the willow-tree."

And the little Brook, all lovingly,
Flowed slowly through the pool;
Where her playful friends, the fishes,
Had their homes so deep and cool.

Then on again she hasten'd,
In cold, in rain, and heat;
Onward and onward springing
With eager twinkling feet.

Hastening, ever hastening—
Untiring, bright and free;
Now, little Brook—be happy—
Thy Silver Lake, oh see!

Then the little Brook leap'd wildly,
And down the glen she springs,—
O'er ferns and tangled branches
A cloud of spray she flings.

It ceased—the wild sweet music
Of the rippling waters pass'd
Away,—as, on the Lake's clear breast,
She found her home at last!

Mrs. Rathbone.

A POET'S HAUNT.

WHERE the bend of the river leaves bare to the
sunlight
Its bed of brown sand and its loose tinkling
shingle;
Where the breath of the noontide comes laden
with sweetness
Through arches of limes, and o'er meadows of
flowers;
Where the bee and the bird bring their songs,
and its beauty
The butterfly poising from blossom to blossom;
Where afar crop the fleet dappled fawns the
park-herbage
With swift stealthy bite, and keen eyes cast be-
hind them:

Where yet the old watch-tower above, flings the
shadows,
Misshapen and broken, it flung there for ages,—
The watch-tower whose beacon hath lighted
the hill-side

While yet the great king of its forest was
acorn—

I lie with some poem to serve me for pillow,
I weave for myself a bright dream of the Future,
While the Present, the blithe silver Present, soft
glideth

Before me in music, as glideth the river.

One fair curvèd arch, like the rainbow, is span-
ning

The river; and, under that frame of the picture,
The loch with its sun-burnished billows upheav-
ing

To soft winds from seaward; the steep-crested
mountains;

The valleys far waving with woodland and
cornland.

The fish boats are passing, red-sailed with their
cargoes;

The fishers are toiling up th' entangled meshes,
The crews round their anchors are shouting in
cadence.

I hear them; I hear the slow beat of the oar-
blades;

The hum of the market that comes from the
pier-head;

The music afar off of life and its labors.

I gaze, till at e'en, o'er the archway, the
maidens

Return to their homes in the Highlands; their
burthens

Secure on their fair heads—a crown to their
tresses.

I dream, till the watch-tower above casts its
shadow

O'er breast and o'er brow: till the dews and the
darkness

Are falling; and Night, with her finger uplifted
For silence, is ruling the Earth and the Waters.

—*Dublin University Magazine.*

TO A LARK.

Singing close to a Railway Station.

BRAVE-HEARTED bird! who, with undaunted
wing,

Despite the toiling engine's deafening sound,
From this bare spot on which no dew doth lie,
Up heavenward so joyously dost spring;
Time was, when, resting on the furrow'd
ground,

Thy nestlings watch'd thee vanish in the sky,
And, poised in air, thy hymn of rapture sing;
Yet e'en in this drear waste thou still hast found
Sweet solace in the charm of minstrelsy,
The gift of song within thy breast concealed.
Oh for thy spirit, bird! hopeful and strong,
Born of the life in poet's heart reveal'd,
Which lifts the soul above all care and wrong!

—*Mrs. Rathbone.*

From The Quarterly Review.

1. *A Comprehensive History of the Iron Trade.* By Harry Scrivenor. London, 1841.
2. *The Theory, Practice, and Architecture of Bridges of Stone, Iron, Timber, and Wire; with Examples on the Principle of Suspension.* London, 1843-1853.
3. *Iron Bridges.* (Article in the "Encyclopædia Britannica.") Edinburgh, 1857.
4. *Traité Théorique et Pratique de la Construction des Ponts Métalliques.* Par MM. L. Molinos et C. Pronnier, Ingénieurs Civils. Paris, 1857.
5. *A Practical Treatise on Cast and Wrought Iron Bridges and Girders.* By W. Humber, C.E. London, 1857.
6. *Grand Trunk Railway of Canada—Correspondence and Reports on the Victoria Bridge.* 1855-6.
7. *Boyd's Marine Viaduct, or Continental Railway Bridge between England and France.* 1858.

FRANCIS HORNER once observed, after inspecting a steel manufactory, that "Iron is not only the soul of every other manufacture, but the mainspring perhaps of civilized society." John Locke even went so far as to aver that notwithstanding man's extraordinary advancement in knowledge, we should in a few ages, "were the use of iron lost among us, be unavoidably reduced to the wants and ignorance of the ancient savage Americans: so that he who first made known the use of that contemptible mineral, may be truly styled the father of arts and author of plenty." Nor will this view be deemed extravagant, if we reflect that but for iron man would be virtually *without tools*, since it is almost the only metal capable of taking a sharp edge and keeping it. Of the various definitions of man by philosophers, not the least forcible is that of "tool-making animal," for with tools he tills the ground, builds dwellings, makes clothes, prints books, constructs roads, manufactures steam-engines, and carries on the whole material business of civilization, on which its very highest developments in a great measure depend.

Perhaps the most curious and interesting museum of antiquities ever collected is that formed by M. Worsaae at Copenhagen, in which the remarkable parallelism in the advances made in civilization and in working in metals, has been illustrated by articles gathered from ancient burying-places. From these remains it appears that, in the first instance, the only tools of man were sharpened

stones, such as are still found in use amongst savage tribes, and which are insufficient to enable him to till the ground, or build, or carve. If he felled a tree, and hollowed out a canoe from its trunk, he had to summon fire to his aid. He could only gather a precarious subsistence by hunting or fishing, using a flint head for his arrows and crooked bones for fish-hooks. The skins with which he covered himself were joined together by thongs or skewers; and any thing like domestic comfort could not exist, for the construction of a dwelling was as yet impracticable. This first stage of man's primeval history M. Worsaae designates "The Stone Period." Copper, which is found in such a state of comparative purity as to require very little smelting to fit it for use, preceded the discovery of iron, which in its native state looks more like a stone, than a metal. The progress of man was now more decided, especially after the art of hardening the copper by admixture with tin had been acquired, when various tools and weapons of bronze were fabricated. Tillage could now be practised, trees could be cut down, and houses and boats built. M. Worsaae designates this "The Bronze Period." During the same epoch, as is curiously illustrated by the Copenhagen collection, gold was well known and highly prized for its beauty. But the utility of gold to man was always very small compared with that of iron, which was the metal next discovered. There was not an art but felt the impulse given to it by the improvement of tools which was immediately effected. The first to profit was the art of war, bows and arrows being shortly supplanted by muskets and cannon. But the beneficent uses of this metal were more extensively experienced in the various branches of peaceful industry—in agriculture, in architecture, in shipbuilding, and in manufactures of all kinds.

The superiority of this metal over all others consists in the vast number of purposes to which it can be advantageously applied, and the various modifications of which it is susceptible in the process of manufacture. There is no other metal which could be so worked up as to serve equally well for a needle and as shot for a ninety-eight-pounder gun; as a surgeon's lancet and a five-ton Nasmyth tilt hammer; as the spring of a watch the size of a shilling, and the hull of a

Leviathan steamship; and which is alike indispensable in the construction of a pair of scissors and an electric telegraph, a steel pen and a railroad, a mariner's compass and a tubular bridge. The iron machines of our manufacturers are driven by the iron steam-engines of Watt, and their products are distributed over iron railroads by the iron locomotives of Stephenson. Intelligence is telegraphed to and from the ends of the earth by means of the iron wire. Our Crystal Palaces are built of glass framed in iron. We have iron roofs, iron houses, iron churches, iron bedsteads, iron lighthouses, iron ships, iron palaces, and iron bridges. In short, we now seem to be in the very midst of M. Worsane's "Iron Age."

Although the iron industry of Great Britain may be pronounced indigenous, by reason of the juxtaposition of coal, ironstone, lime, strong men, and cheap transit—a combination not yet known to exist in the same perfection in any other country in the world—it is only of comparatively late years that the manufacture has assumed its present gigantic magnitude. So long as the ore was smelted by means of charcoal made from wood, the produce of the metal was very limited, and its price excessive. The manufacture was for some time partially prohibited in England, the consumption of wood charcoal in the process of smelting being so great as to create apprehensions that if care were not taken of the remaining forests, enough timber would not be left to supply the wants of the royal and mercantile navy. Hence acts were passed in the reigns of Elizabeth and James, forbidding the felling of timber for the smelting of iron, except in certain districts of Kent, Sussex, and Surrey, then the principal seats of the manufacture, and even there the erection of new works was expressly forbidden. These enactments had the effect of greatly checking the manufacture, which shortly ceased in the southern counties, the last iron forged in Kent having been the rails round St. Paul's Cathedral, which were cast at Lamberhurst, about the beginning of last century.

Attention was then directed to the smelting of ironstone by means of pit coal. Large stores of both these minerals existed side by side in the midland counties. Amongst others Lord Dudley gallantly struggled to establish a manufactory in the neighborhood of Stour-

bridge, and partially succeeded; but what with riots among the iron workers, who broke into and destroyed his works, and the wars of the Great Rebellion, which ruined his fortunes, the noble lord reaped no advantage from his enterprise. Nothing contributed to arrest the decline in this branch of trade, and towards the middle of last century the number of furnaces, which in James I.'s reign had amounted to 300, fell off to 59, the principal part of the iron consumed in England being imported from foreign countries. The partial use of pit-coal in the process of smelting was revived at Coalbrookdale, in Shropshire, about 1713. The chief difficulty was to keep the coal in a state of combustion sufficiently intense for the purpose of smelting the ore; the hand-worked bellows, or the more powerful water-movement, which produced blast enough for charcoal, having comparatively little effect upon coal. This obstacle was finally overcome through the perseverance and enterprise of Dr. John Roebuck (grandfather of the present member for Sheffield), who may be said to have originated the modern iron manufacture of Britain, though his merits as a great public benefactor have as yet received but slight recognition. Being a good practical chemist, his inquiries led him, when residing at Birmingham, where he practised as a physician, to seek for more economical methods of smelting iron ore than those then in use. Several gentlemen having joined him in his enterprise he selected a site on the banks of the River Carron, in Stirlingshire, in the neighborhood of which both coal and iron abounded; and there he planted the germ of the now celebrated Carron Works. With the assistance of Mr. Smeaton, the engineer, he erected powerful blowing cylinders, worked by water, and supplied by means of an atmospheric engine. The original works were completed in 1759, and before long the Carron castings acquired an extensive celebrity. But, besides being the first to manufacture cast-iron by means of pit-coal on a large scale, Dr. Roebuck was the inventor in 1762 of the process for converting the produce into malleable iron, a discovery usually attributed to Henry Cort, whose patent was taken out twenty years later. Dr. Roebuck's specifications leave no room for doubt: the cast-iron was melted on a hearth with a blast, and then worked until "reduced to nature;" in that state it was exposed to "the

action of a hollow pit-coal fire, heated by the blast of the bellows until reduced to a loop," which was then "drawn out under a forge hammer into bar-iron." Successive improvements were made by other inventors,—by the Carneges, in 1766, who invented the reverberating, or air furnace; by Onions, in 1783, who patented the puddling process; and finally by Cort, in 1783-4, who, besides embodying these processes in his patent, introduced the use of grooved rollers, an addition of great importance. But all these appliances would have proved of comparatively small value without the aid of the steam-engine, which was about the same time taken in hand by James Watt. Dr. Roebuck had early discovered the value of Watt's improvements, encouraged him in their prosecution, and eventually became a partner in the patent. But having taken a lease of the Duke of Hamilton's coal near Boroughstouness, with the object of securing an abundant supply of coal for his ironworks, the difficulties encountered in the mining proved so great, that the Doctor was involved in serious embarrassment, and made over his share in Watt's invention, by this time perfected, to Mr. Boulton of Soho, to whom it proved a source of vast wealth.

From the period of the introduction of Boulton and Watt's engines, and their employment in blowing the iron furnaces, the progress has been truly astonishing. The total quantity previously manufactured in Great Britain did not amount to more than twenty thousand tons annually: but by the end of the century the production had increased ten times. The introduction of the hot blast by Mr. Neilson of Glasgow in 1828, and the discovery by Mr. Mushet of the Black Band ironstone, gave a further impulse, especially in Scotland,—a country in which the metal was formerly so scarce that in the times of the Edwards, the Scotch were accustomed to make predatory incursions into England for the sake of the iron they could carry off, but in the course of last year they not only manufactured sufficient for their own use, but exported 500,000 tons. In England the pig iron produced during the past year reached the astounding quantity of 3,636,377 tons; which, at an average price of £4 a ton, represents a total annual value of fourteen millions and a half sterling. Nor does there seem to be any limit to the supply, for almost bound-

less stores of the mineral have recently been discovered in Yorkshire, Northamptonshire, and other counties. It is this extraordinary abundance and comparative cheapness of manufactured iron in England which has enabled it to be applied to purposes which formerly were never dreamt of. It promises before long to supersede timber in ships' hulls of large burden. Indeed, a timber ship of even half the tonnage of the Leviathan would be an impossibility. The modern structures in this metal bid fair to equal in grandeur the monuments which have been the admiration of ages; and amongst these triumphs of engineering in our day, iron bridges and viaducts undoubtedly occupy the first rank.

The progress of bridge building has at all times kept pace with that of road making. The best ferries are insufficient to connect the opposite banks of a river, across which there is any considerable amount of traffic. Like every thing else, bridges had very humble beginnings. As the prototype of the man-of-war was a canoe hollowed out of the trunk of a tree, so the magnificent bridge of modern times began with a log thrown across a stream. A number of these laid together and planked would form a track sufficient for foot-passengers and pack-horses. But as vehicles came into use, something better was required, and then the bridge of timber or stone was devised. Public benefactors in past times were accustomed to leave money* for structures so useful as the best means of displaying their benevolence and commemorating their names. The stream of traffic, sometimes from a large extent of country on either side, gave great importance to the locality which enjoyed the advantage; and towns and cities became exceedingly jealous of the privileges thus conferred upon them. A curious illustration of this is afforded by what occurred in our capital. Down to 1750 London Bridge formed the only connexion between the two sides of the river. Various attempts were made to obtain the benefits of a second bridge, but they were strenuously and successfully resisted. Thus, in 1671, when it was proposed to build a bridge at Putney, the citizens of London rose in oppo-

* One of the first stone bridges in England was erected and endowed by Queen Matilda, who on one occasion narrowly escaped drowning when crossing the river Lea, at Stratford, in Essex. The place was hence afterwards called *De Arcubus*, or *Le Bow*.

sition to the scheme, and protested against any bridge being established which should enable the traffic to pass from one side of the river to the other without going through the City. When the bill was brought into the House of Commons, a remarkable debate took place which is recorded by Mr. Grey.* Mr. Love declared the opinion of the Lord Mayor to be, "that if carts were to go over the proposed new bridge, London must be destroyed!" Sir William Thompson opposed it because it would "make the skirts of London too big for the body," besides producing sands and shelves in the river, and affecting the below-bridge navigation which would cause the ships to lie as low down as Woolwich; whilst Mr. Boscawen opposed the bill because, if conceded, there might be a claim set up for even a *third* bridge, at Lambeth or some other point. The bill was thrown out on these grounds by a majority of 67 to 54; and for nearly a hundred years more London had no second bridge, notwithstanding that Old London Bridge was so narrow that there was not room for two carts to pass each other. The London Bridge of the present day is capable of accommodating four continuous streams of vehicles, with the addition of wide pavements for foot passengers. Yet it is sometimes "blocked" for an hour together by the press of traffic between London and Southwark; and, on an average, 12,000 vehicles and 60,000 pedestrians cross it daily. Though there are now nine bridges from Putney to the City, five of which, when Westminster Bridge has been completed, will be of iron, the City of London is not "destroyed" and the almost daily cry is for more bridges!

The first employment of iron for the purposes of bridge building was in the form of cast-iron. Compared with the weight of a solid stone and lime bridge, a cast-iron one possesses the merit of lightness, which is of great value where headway is of importance, or where the difficulties of defective foundations have to be met. The Italian and French engineers, who took the lead in engineering works down to the end of last century, early discerned the value of the material, and made several attempts to introduce it, but without success, chiefly because of the inability of the early iron-founders to cast

* Debates of the House of Commons, from the year 1667 to 1694, collected by the Hon. A. Grey. 1767.

large masses, and because it was then more expensive than stone or timber. The first attempt was made at Lyons, in 1755, and one of the arches was put together in the builder's yard; but the project was abandoned as too costly, and timber was eventually substituted. It was reserved for English engineers to triumph over the difficulties. The efforts of Mr. Darby of the Coalbrookdale Iron Works to smelt iron with coke had been attended with such success, as to enable it to be cast in masses of sufficient size for building purposes. A bridge was required across the Severn near the village of Broseley in Shropshire, and it was determined to try the experiment of a bridge of cast-iron of about a hundred feet span. It was constructed after the designs of Mr. Pritchard, a Shrewsbury architect; and though it was on the whole a bold design well executed, the error was committed of treating the arch as one of equilibrium. There seems to have been, in addition, some defect in the abutments, which were forced inwards by the pressure of earth behind them, and the arch was partially fractured. Nevertheless the bridge proved serviceable, and remains so to this day.

It is a curious circumstance that the next successful contriver of an iron bridge—and that of the very boldest design—was no other than the celebrated, or rather the notorious Tom Paine. The son of a decent Quaker of Thetford, who trained him to his own trade of a staymaker, he seems early to have contracted an intense dislike for the drab-colored circle within which he was immured. Arrived at manhood, he left stay-making for the wild life of a privateersman, serving in two successive adventures; but his father sought him out, and induced him to settle down to his old calling at Sandwich. There he married the daughter of an exciseman, and became an exciseman himself; but his commission lasted only for a year. He then filled the office of usher in several schools, and studied mathematics and mechanics. Again appointed exciseman, he was stationed at Lewes in Sussex, where he acquired some local celebrity as a poet. While there, he was selected to draw up the petition to government from the excise officers for increase of pay,—a document which procured him an introduction to Oliver Goldsmith and Benjamin Franklin, and his dismissal from his post. Franklin persuaded Paine to go to

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America; and the quondam staymaker, privateersman, usher, and exciseman, took a prominent part in the Revolutionary controversy, and performed several important services to the States in negotiating loans with France and Holland, for which he was liberally rewarded by public grants of money and lands. He then settled down at Philadelphia to mechanical and philosophical studies, and speculations on electricity, minerals, and the uses of iron. In 1787, when a bridge over the Schuylkill was proposed to be constructed without any river piers, as the stream was apt to be choked with ice in the spring freshets, Paine boldly offered to build an iron bridge with a single arch of 400 feet span. The same year we find him at Paris, submitting the plan of his bridge to the Academy of Sciences, whose opinion was decidedly favorable. He sent a copy of the same design to Sir Joseph Banks to be submitted to the Royal Society; and he next proceeded to the Rotherham iron works, in Yorkshire, to have his bridge cast. It was a segment of an arch of 410 feet span, and constructed of framed iron panels radiating towards the centre in the form of voussoirs. An American gentleman named Whiteside, having advanced him money on the security of his property in the States, he was enabled to complete the castings of the bridge, which were then shipped off to London, and erected on a bowling green at Paddington. There it was visited by a large number of persons, and regarded as a great success. Suddenly, however, his attention was drawn away from the prosecution of the work by the publication of Mr. Burke's celebrated letter on the French Revolution, which he undertook to answer. Whiteside having become bankrupt, Paine was arrested by his assignees, but was liberated by the assistance of two other Americans, who became bail for him. He was now lost for a time amid the surges of the French Revolution. Elected a deputy to the National Convention by the inhabitants of Calais, he had not been long in Paris when Robespierre and other "Friends of Man" had him imprisoned in the Luxembourg, where he lay for eleven months. Having escaped to America, we find him in 1803 presenting to the American Congress a memoir on the construction of iron bridges, accompanied by several models. It does not appear, however, that Paine succeeded in erecting his

bridge. He was a restless, speculating, unhappy being; and it would have been well for his memory if, instead of penning shallow infidelity, he had devoted himself to his original idea of improving the internal communications of his adopted country. In the mean time, however, the bridge exhibited at Paddington had produced results. The manufacturers agreed to take it back as part of their debt, and the materials were used in the noble structure over the river Wear at Sunderland, where it was erected in 1796. This bridge was long regarded as the greatest triumph of the art. Its span exceeded that of any existing stone arch, being 236 feet, with a rise of 34 feet, the springing commencing at 95 feet above the bed of the river; and its height was such as to allow vessels of 300 tons' burden to sail underneath without striking their masts. After its erection, the bridge, being imperfectly braced, deflected laterally to the extent of from 12 to 18 inches; and though the arch was partially restored to its original form by wedges, tie-bars and braces, its stability has always been regarded as precarious. "If," says Mr. Stephenson, "we are to consider Paine as its author, his daring in engineering certainly does full justice to the fervor of his political career; for, successful as the result has undoubtedly proved, want of experience, and consequent ignorance of the risk, could alone have induced so bold an experiment; and we are rather led to wonder at, than to admire a structure which, as regards its proportions and the small quantity of material employed in its construction, will probably remain unrivalled."

About the period of the erection of the Wear Bridge, Mr. Telford, then rising into eminence as an engineer, began to employ cast-iron extensively in bridges, having, as early as 1796, constructed a bridge of that material over the Severn at Buildwas. His finest examples, however, were the Tewkesbury, Craigellachie, and other similar structures. So favorable was Mr. Telford to the employment of this material, that, in 1801 he even proposed to throw a single arch of cast-iron across the Thames at London Bridge, with an opening of 660 feet, and providing a clear headway of 65 feet above high water. The plan was received with considerable incredulity, and it was sarcastically said that he had determined to set the Thames

on fire. But Old London Bridge was becoming rickety. It was deemed necessary to take some steps, and a Committee of the House of Commons was appointed to inquire into the feasibility of his design. Amongst the eminent men consulted were the venerable James Watt of Birmingham, Professor Hutton of Woolwich, Mr. John Rennie, Professors Playfair and Robison of Edinburgh, Mr. Jessop, Mr. Southern, and Dr. Maskelyne. It was generally admitted that the experience which had been obtained up to that time of the resistance of cast-iron to compression was too small to enable a positive opinion to be expressed on the subject. Professor Robison foresaw immense difficulty in casting pieces of the necessary size and exactness, so as to have the radiated joints all straight and bearing; and he apprehended the chipping off of the upper angles of the castings at the crown of the arch by the compression caused by the removal of the centres. On the whole, it appeared to the parliamentary Committee that the project was far too bold for adoption; and it was eventually abandoned, after considerable expense had been incurred in contracting the river to the necessary width.

Iron bridges of smaller span continued to be successfully erected both in Great Britain and France—the Pont du Louvre (1803) and the Pont d'Austerlitz (1806) being well-known examples. These, however, were shortly thrown into the shade by the Vauxhall Bridge of Mr. James Walker and the Southwark Bridge of Mr. Rennie. Among the examples of arch-construction the latter remains to this day unrivalled as regards its colossal proportions, its massive architecture, and the general simplicity and efficiency of its details. The bridge is of three arches, the centre being of not less than 240 feet span—the most extensive stone arch in existence, that over the Dee at Chester, being only 200 feet. It was found, however, to be a defect in the original construction, that it was liable to expansion and contraction by the alternate heat and cold of day and night, of summer and winter—the arch rising in summer about an inch and a half above its winter's height. The roadway was consequently subject to constant disturbance, and considerable inconvenience was experienced from its leakiness, which has never been entirely remedied.

It will be observed that up to this time all the bridges constructed of cast-iron were in

the arched form, and the same principles were followed as in bridges of stone, where the arch is treated as one of equilibrium, and all its parts are supposed to be equally at rest, the thrust being resisted directly by the abutments. But during the same period in which the use of cast-iron had been extending, wrought iron had also been introduced as the essential material in suspension bridges capable of bearing the traffic of common roads. While cast-iron is of a crystalline, wrought iron is of a fibrous structure; the former being much superior to stone or any other material in resisting compression, the latter being capable of resisting tensile strains to an enormous extent, on which quality its fitness for the purposes of suspension bridges chiefly depends. Thus, whilst granite bears a crushing force of about five tons to the square inch, and malleable iron from twelve to thirteen tons, the crushing force which cast-iron will bear is not less than from thirty-six to forty-nine tons to the square inch. But whereas cast-iron offers a resistance to extension of only from three to seven tons per square inch, wrought iron presents a resistance of not less than from sixteen to eighteen tons.

The semi-civilized nations of South America had long adopted suspension bridges of a light description for the crossing of rivers and narrow valleys. In Chili and Peru, in China and India, bridges of this sort, constructed of hide, rope, and bamboo basket-work, were well known and long used. The first suspension bridge in this country was of a very rude description, consisting of two common chains stretched across the river Tees near Middleton, upon which a footpath was laid, enabling the colliers to pass between their cottages and the colliery, which stood on the opposite side of the river. Sir Samuel Brown greatly improved—he may almost be said to have invented—the iron suspension bridge, by introducing the system of the barlink, now generally adopted. It is a curious and interesting circumstance that he derived the first idea of this contrivance from a spider's web which hung across his garden walk one dewy autumn morning. Many bridges were made on his principle—on the Tweed, at Newhaven, at Brighton, at Montrose, and other places. The finest work of this kind, however, was the celebrated Menai Bridge, constructed by Telford over the arm of the sea which flows between the mainland of Wales and the island

of Anglesea. And although it has been thrown into the shade by the great railway bridges of recent years, it was unquestionably the boldest and most successful engineering undertaking of that time. The proposal which Telford had made some twenty years before to bridge over the Thames with a single arch of cast-iron, was now exceeded in daring by his scheme of bridging over an arm of the sea with a suspension bridge of wrought iron, under which a ship might pass in full sail. The years which intervened had been to Telford full of the results of observation gathered in the school of daily experience. Though originally but a working mason, who commenced his career with the building of dry stone dikes in Dumfriesshire for the Duke of Buccleuch, he had by dint of valorous industry reached the very first rank in his new profession. He had no education beyond what he had gathered at a Scotch parish school. But he possessed a remarkably clear insight, and, like Brindley and Stephenson, arrived at his conclusions by a sort of instinct. He had already built so many bridges of stone and iron, and constructed so many main highways, that his contemporaries distinguished him as "Pontifex Maximus" and the "Colossus of Roads." When instructed by Government to prepare plans for a bridge across the Menai Straits, he had already occupied much time in ascertaining, by experiments, the tensile power of iron; and the result determined him to recommend for adoption a suspension bridge of wrought iron as best suiting all the exigencies of the case. The bridge being in the vicinity of the Snowdon range, and situated at a great height—100 feet above the level of the sea at high water—was subject to violent gusts of wind, and it was therefore necessary that it should present as small a surface as possible to its force.

The point of crossing selected was Ynys-y-moch (or Pig Island), on which one of the two main suspension piers was placed, and the foundation-stone of the first was laid on the 10th of August, 1819. The total height of the main piers from low water-spring-tide is 194 feet, the height of the roadway above high water 100 feet. The road platform was occupied by two parallel carriage-ways, each 12 feet in breadth, with a footpath of four feet between them, thus admitting of four distinct lines of suspension-chains. The distance between the points of suspension was 579 feet.

The extremities of the chains were firmly fixed into the solid rock on either side, and hung loosely over cast-iron saddles placed on the two main towers; and from these chains the horizontal platform or roadway was suspended by vertical rods. The entire work was very skilfully done; every piece of iron used in the bridge was subjected to careful tests, and each bar made to bear a strain of at least 35 tons. The bridge was finished and opened for traffic on the 30th of January, 1826, having been five years and a half in building.

It is a serious objection to bridges of the suspension kind that they are liable to undulate and swing by the passage of a comparatively light load, by the action of the wind, and more particularly by the regular tread of a body of men. A suspension bridge at Broughton, near Manchester, was broken down, in 1831, by the march of a company of only sixty soldiers, and a similar accident happened at Angers in France. The chain-pier at Brighton was in like manner seriously damaged in 1833 by the force of the wind and the waves, which threw the platform into a state of violent vibration, and reduced it almost to a total wreck. Nor has the Menai Bridge escaped damage from the same cause. In January, 1839, a storm of wind so injured it that one-third of the suspending-rods were broken, both the carriage-ways were rendered impassable, and nearly 200 feet of one of them was broken away. It seems a marvel how the bridge, under such a vibratory strain, should have escaped complete destruction.

Amongst the best and most recent specimens of road suspension bridges may be mentioned Mr. Tierney Clark's over the Danube at Buda-Pesth, Mr. Brunel's over the Thames at Charing-Cross, and Mr. Page's over the Thames at Chelsea. The Buda-Pesth and Charing-Cross Bridges are both of greater span than the Menai; the former, which includes a carriage-way as well as a foot-road for passengers, being 700 feet, the latter, which is a foot-road only, being 676 feet. In Mr. Brunel's bridge, the rigidity has been increased by connecting together the chains on each side of the bridge so as to constitute essentially but one chain, every suspending-rod bearing with an equal strain on both. Mr. Page's bridge is chiefly remarkable for the elegance of its design, in which we detect the skill of the architect as well as of the

engineer. By means of two wrought-iron longitudinal lattice-girders extending the entire length of the bridge, firmly secured to the suspension-chains by vertical rods, great rigidity is secured. Cast-iron, in graceful forms, has also been extensively employed in the columnar suspension towers, the piers, and the foundations, which are strongly cased in iron.

The noble bridge over the Danube at Buda-Pesth was a work of much greater difficulty. The previous communication had been effected by means of a bridge of boats, often destroyed or seriously damaged at the breaking up of the ice in spring, when the passage of the stream was completely interrupted. The bed of the river—about a quarter of a mile wide—was sand and mud to a considerable depth, presenting bad foundations; and it was feared that the expense of constructing the requisite number of piers for a stone or cast-iron bridge would have rendered either impracticable. Under these circumstances, a suspension bridge was determined on and commenced amidst general misgivings. The Hungarians believed that the bridge could never stand the pressure of the winter floods, and they apprehended that the piers would be swept away by the torrents of ice which rush down the Danube in spring. Great opposition was encountered from the nobles, whom, for the first time, it was proposed to tax for the purpose. Such a thing had never before been heard of as Hungarian nobles paying tolls. Count Széchenyi, the patriotic projector of the work, inveighed against them in the Diet, wrote against them in the journals, and in the end conquered them. A Bill passed both Chambers in 1839, by which the legal taxation of the nobles, in the form of a bridge-toll, was acknowledged. The *Judex-Curie* shed tears on the occasion, and declared that "he would never pass that ill-fated bridge, from the erection of which he should date the downfall of Hungarian nobility." The works were commenced in the following year, and considerable difficulty was experienced, as had been anticipated, in securing proper foundations. Some of the staging was carried away on the breaking up of the ice in January, 1841, but on the whole what had been done was not greatly damaged. The work proceeded steadily, and the superstructure was pretty well advanced in 1849. The chains had just

been raised, the roadway beams fixed in their places, and the upper parts of the suspension-towers finished, when the Hungarian revolution broke out. Towards the end of December, on the advance of the Austrian army, the Provisional Government sitting at Buda sent messages to the directors of the bridge, requiring them, under heavy penalties, immediately to prepare the approaches for the passage of the rebels and their artillery. It was in vain represented that the bridge was unfinished, and that dangerous consequences might ensue. Temporary planking was laid upon the longitudinal larch timbers, to save them as much as possible, and the whole Hungarian army retreated over the bridge—infantry, cavalry, artillery, and baggage-waggons. A few days after, the Imperial troops, to the number of 70,000, with 270 cannon, crossed after them, and took possession of Buda-Pesth. The bridge works proceeded in the very midst of the war, though the supply of iron-work was stopped in consequence of the foundries being taken possession of to cast cannon for the contending armies. Strong batteries were thrown up on the Buda side to defend the entrance to the bridge and to sweep its platform. The workshops were cleared away, and the materials removed to a distance. The Imperial troops, being repulsed by the Hungarians from Pesth, again crossed the bridge, after which Hentzi, the Austrian General, had the platform timbers stripped off, leaving the cast-iron beams and trussing quite bare. Arrangements were made for blowing asunder the chains, in event of the Hungarians attempting to force a passage, and 30 cwt. of gunpowder was deposited for the purpose. Firing went on between the rival forces on the opposite banks; about a hundred Austrian cannon were directed against Pesth, and when Georgey arrived in that city on the 4th of May, he commenced bombarding Buda, which stands exactly over against it. The cannonade continued day and night for eight days, and Pesth was set on fire in thirty-two different places. Mr. Adam Clarke, the resident engineer, had his house smashed with 24lb. shot. Some damage was done to the bridge machinery and to the columns of the toll-house on the Pesth side, but far less than might have been expected. Buda having been successfully stormed by the Hungarians, one of the last acts of the Austrian General

Hentzi was to set fire to the powder on the bridge with his own hands, blowing himself and about 80 feet of the skeleton of the platform to atoms. After this all resistance ceased. Georgey had the bridge temporarily repaired for the passage of his troops. It was found that some injury had been done to the chains by the heavy shot, steps were immediately taken to replace them, and the works went on as vigorously as before. Again the tide of war turned, and the Hungarians being beaten at Raab, Dembinsky made arrangements to blow up the bridge as the Austrians had done before, in order to protect the retreat of his troops. Mr. Clarke implored the General not to commit such an act of Vandalism, and offered again to take up the planking, and render the road impassable. Dembinsky consented, the bridge was stripped of its timbers, and when close upon completion, was once more reduced to a skeleton. When the war was ended, the bridge was finished, and the people of Buda-Pesth now proudly pronounce it to be the "eighth wonder of the world."

A curious modification of the suspension bridge is presented in that erected over the valley of the Sarine in Switzerland, connecting the hill on which stands the city of Fribourg with the opposite mountain. Before this bridge was built, the road leading through Fribourg to Berne and the German frontier of Switzerland descended into the valley and gained the summit of the mountain opposite by an exceedingly crooked and precipitous route. The passage was at all times dangerous, and in winter usually impassable. This state of things continued until 1830, when M. Chaley, a French engineer, undertook to build a bridge across the valley. It is remarkable that this, the largest single-span bridge in the world, exceeding that of Telford by more than three hundred feet, should be entirely constructed of so delicate a material as *fine wire* little more than a tenth of an inch in diameter! The bridge, which includes a carriage-way with a footpath on each side, is of the vast span of 870 feet between the suspension towers, and is supported by four main suspension cables, each composed of 1056 threads of wire, bound firmly by a ligature of the same material at every two feet, and thus preserving its cylindrical form.

An American engineer, Mr. Roebling, has even had the daring to employ a wire sus-

pension bridge, for the purposes of railway traffic across a rapid river. American engineers frequently exercise their highest skill in "doing things cheap." Hence there is perhaps more bad, rickety workmanship in America than in any other civilised country. One of the most vaunted merits of this railway suspension bridge is that it has cost only £80,000; whereas a rigid wrought-iron bridge, if constructed by an English engineer, might have cost more than double the money. Nevertheless, Mr. Roebling's bridge is an ingenious work, and does him much credit. It forms the link which binds the railways of Western Canada with those of the United States, and spans the wide and deep gorge at the bottom of which flows the Niagara River, about two miles below the Falls. The span of the bridge as originally constructed was not less than 320 feet, and the roadway is 250 feet above the level of the stream. It makes the head dizzy to look down from that immense height upon the waters rushing below at the rate of about thirty miles an hour. Seen from beneath, standing by the river's side, the bridge looks like a strip of paper suspended by a cobweb. When the wind is strong, the gossamer-looking structure swings to and fro as if ready to start from its fastenings, and it even shakes under the firm tread of the passing pedestrian. Yet, though suspended by means of wire—the first cord of which was carried across the river at the tail of a kite—it is of considerable strength, bearing locomotives and trains along the railroad above, and ordinary road traffic upon the platform immediately underneath it. The floors of both roads are constructed of timber beams, with wrought-iron diagonal rods passing between them; and both platforms have three distinct sets of suspension wire cables, which rest upon separate saddles on the top of the suspension towers. The four cables—two suspending the upper, or railroad, and two suspending the lower road, or highway—are each of ten inches diameter, composed of 3640 wires of No. 9 gauge, making the solid section of each wire rather more than 60 square inches. From the suspension cables descend 624 suspenders, also of wire, each stated to be capable of supporting a weight of 30 tons. The anchor chains are firmly imbedded in masonry, built deep into the solid rock on either side. Whilst it must be admitted that the Niagara Bridge has been

to some extent successful, most engineers entertain great doubts as to the applicability of the suspension principle to railway purposes. Shortly after this bridge was opened, it was ascertained that the deflection caused by the passing trains was so considerable—varying according to the load from five to nine inches—that it was found necessary to reduce the span about a hundred feet by building up underneath the platform at each end, and by additional strutting; and after all, the speed of the passing trains had to be reduced from five to three miles an hour, while the load was reduced to its minimum. The adoption of the suspension principle is no doubt a great temptation to those engineers who study the saving of expenditure at the outset; but it is highly probable that the cost of maintaining the cheaper structure will be found to amount to considerably more than the interest on the extra capital that would have been required to erect a rigid iron bridge capable of bearing railway traffic at ordinary speeds.

We now come to iron railway bridges proper, in the construction of which the English engineer has achieved his greatest triumphs, and exhibited higher skill and ingenuity in surmounting difficulties than in any other branch of his Cyclopean science. On the introduction of railways, an extraordinary stimulus was given to the art of bridge building. The necessity which existed for carrying rigid roads, capable of bearing heavy railway trains at high speeds, over extensive gaps free of support, rendered it apparent that the methods which had up to that time been employed for bridging space were altogether insufficient. The railway engineer could not, like the ordinary road engineer, divert the road, and select the best point for crossing a river or a valley. He must take such ground as lay in the line of his railway, be it over bog, or mud, or shifting sand. Navigable rivers and crowded thoroughfares had to be crossed without interruption to the existing traffic, sometimes by bridges at right angles to the stream or road, sometimes by arches more or less oblique. In many cases great difficulty arose from the limited nature of the headway; but, as the level of the original road must generally be preserved, and that of the railway was in a measure fixed and determined, it was necessary to modify the form and structure of the bridge in almost every case in order to comply

with the public requirements. Novel conditions were met by fresh inventions, and difficulties of the most unusual character were one by one successfully surmounted. Instead of the erection of a single large bridge, constituting, as formerly, an epoch in engineering, hundreds of extensive bridges of novel construction were simultaneously constructed. The number built since the commencement of the railway era is not less than 25,000 in Great Britain alone, or more than all the bridges previously existing in the country. In London and the suburbs there are above 11 miles of viaducts, consisting of a series of arches. In executing this vast amount of bridge work, iron has been the sheet-anchor of the engineer. In its various forms it offered an invaluable resource, where rapidity of execution, great strength, and cheapness of construction, were elements of prime importance.

In many of the early cast-iron bridges the old form of the arch was adopted when the structure depended wholly on compression, the only novel feature being the use of iron instead of stone. But in a large proportion of cases, the arch, with the railroad over it, was found inapplicable, in consequence of the limited headway which it provided. Hence it early occurred to Mr. George Stephenson, when constructing the Liverpool and Manchester Railway, to adopt the simple cast-iron beam for the crossing of several roads and canals along that line; then cast-iron arched girders, with their lower webs considerably larger than their upper, came into general use where the span was moderate; and wrought-iron tie-rods below were added to give increased strength where the span was greater. A serious accident, however, which occurred to a bridge of this description over the Dee, near Chester, tended to throw discredit on this kind of structure. It was felt that the theory of equilibrium of the stone arch, as employed in ordinary road bridges, was inapplicable in the case of railway cast-iron bridges, where the rolling load bears so much larger a proportion to the weight of the whole structure. From a series of experiments, afterwards conducted by government engineers, it also appeared that girders were more apt to be deflected by a load run over them at a high speed, when it was supposed that the weight of the locomotive coming suddenly upon the bridge had the effect of giving it a heavy blow, and thus increased the risk of fracture, though the

same bridge might be able to sustain a standing load of more than six times its breaking weight. Although railway engineers accounted differently for the fact, they were agreed in the necessity of contriving bridges of iron of greater strength and rigidity, capable of safely bearing heavy loads at high speeds.

The next step was the contrivance of arched beams or bowstring girders, firmly held together by horizontal ties, to resist the thrust, instead of abutements. Numerous specimens of this description of bridge, designed by various engineers, might be adduced, but as the very finest specimen of such a bridge yet constructed—as a monument of modern engineering skill with the impress of power as grandly stamped upon it as on any work of our times—we prefer introducing a brief description of the High Level Bridge at Newcastle, which is due to the genius of Mr. Robert Stephenson.

The problem was, to throw a railway bridge across the deep ravine which lies between the towns of Newcastle and Gateshead, at the bottom of which flows the Tyne—a navigable river crowded with “keels,” which bear down from colliery staiths their loads of black diamonds for the London market. Along and up the sides of the valley—on the Newcastle bank especially—run streets of old-fashioned houses, clustered together in strange forms peculiar to the older cities. The ravine is of great depth—so deep and so gloomy-looking towards dusk, that local tradition records that when the Duke of Cumberland arrived late in the evening at the brow of the hill overlooking the Tyne, on his way to Culloden, he exclaimed to his attendants, on looking down into the black gorge before him, “For God’s sake, don’t think of taking me down a coal-pit at this time of night!” The road down the Gateshead High-street was almost as steep as the side of a house, and up the Newcastle Side, as the street there is called, it is little better. During many centuries the traffic north and south passed along this dangerous and difficult route over the old bridge which crosses the river in the bottom of the valley. For some thirty years the Newcastle corporation discussed various methods of improving the bridge road between the towns; Captain Brown, Telford, and other engineers, were consulted, and the discussion might have gone on for thirty years more, but for the advent of railways, when the skill and enterprise to

which they gave birth speedily solved the difficulty and bridged the ravine. The locality adroitly took advantage of the opportunity, and insisted on the provision of a road for ordinary vehicles and foot passengers in addition to the railroad. In his circumstance originated one of the striking peculiarities of the High Level Bridge, which serves two purposes, being a railway above and a carriage roadway underneath. The work was not executed, however, without dismal forebodings on the part of some of the Gateshead people; one of whom, on hearing the pile-driving machine at work with the foundations, was wont to ejaculate, “There goes another nail in the coffin of Gateshead!”

The breadth of the river at the point of crossing is 515 feet, but the length of the bridge and viaduct between the Gateshead station and the terminus on the Newcastle side is about 4000 feet. It springs from Pipewell Gate Bank, on the south, directly across to Castle Garth, where, nearly fronting the bridge, stands the fine old Norman keep of the *New Castle*, now nearly eight hundred years old, and a little beyond it is the spire of St. Nicholas Church, with its light and graceful Gothic crown; these noble relics of the older civilization thus confronting this beautiful offspring of the new. The bridge passes completely over the roofs of the houses which fill both sides of the valley, and the extraordinary height of the upper parapet, which is about 130 feet above the bed of the river, offers a prospect to the passing traveller the like of which is nowhere else to be witnessed. Far below are seen the queer chares and closes, the wynds and lanes of old Newcastle; the water is crowded with pudgy, black, coal keels, each with their single sail, said to be of the same primitive model as the vessels of the early Danish invaders who so often ravaged Tyneside; and, when there is a lull of the great smoke volcanos which usually obscure the sky, the funnels of steamers and the masts of the shipping may be seen extending far down the river. The old bridge lies so far beneath that the passengers crossing it seem like so many bees passing to and fro. The High Level Bridge itself is an eminently picturesque object seen looming amidst murky clouds of smoke, and Roger Fenton has made it the subject of one of his happiest photographs.

The first difficulty encountered in building

the bridge was in securing a solid foundation for the piers. The dimensions of the piles to be driven were so huge, that the engineer found it necessary to employ some extraordinary means for the purpose. He called Nasmyth's Titanic steam-hammer to his aid—the first occasion, we believe, on which this prodigious power was employed in bridge pile-driving. A temporary staging was erected for the steam-engine and hammer apparatus, which rested on two keels, and, notwithstanding the newness and stiffness of the machinery, the first pile was driven on the 6th of October, 1846, to a depth of 32 feet in four minutes. Two hammers of 30 cwt. each were kept in regular use, making from 60 to 70 strokes per minute; and the results were astounding to those who had been accustomed to the old style of pile-driving by means of the ordinary pile-frame, consisting of slide, ram, and monkey. By the old system, the pile was driven by a comparatively small mass of iron descending with great velocity from a considerable height—the velocity being in excess and the mass deficient, and calculated, like the momentum of a cannon-ball, rather for destructive than impulsive action. In the case of the steam pile-driver, on the contrary, the whole weight of a heavy mass is delivered rapidly upon a driving-block of several tons weight placed directly over the head of the pile, the weight never ceasing, and the blows being repeated at the rate of a blow a second, until the pile is driven home. It is a curious fact, that the rapid strokes of the steam-hammer evolved so much heat, that on many occasions the pile-head burst into flames during the process of driving. The elastic force of steam is the power that lifts the ram, the escape permitting its entire force to fall upon the head of the driving block; whilst the steam above the piston on the upper part of the cylinder, acting as a buffer or recoil-spring, materially enhances the effect of the downward blow. As soon as one pile was driven, the traveller, hovering overhead, presented another, and down it went into the solid bed of the river, with as much ease as a lady sticks pins into a cushion. By the aid of this formidable machine, what was formerly amongst the most costly and tedious of engineering operations, was rendered simple, easy, and economical.

When the piles had been driven and the coffer-dams formed and puddled, the water

within the enclosed space was pumped off by the aid of powerful engines to enable the foundations to be dug out and built up. Considerable difficulty was experienced in getting in the foundations of the middle pier, for the surrounding pressure forced in the water through the quicksand below as fast as it was removed. This fruitless labor went on for months, and many expedients were tried. Chalk was thrown in in large quantities, outside the piling, but without effect. Cement concrete was at last put within the coffer-dam, until it set, and the bottom was then found to be secure. A bed of concrete was laid up to the level of the heads of the piles, and the foundation course of stone blocks was commenced about two feet below low water, and the building proceeded without further difficulty. It may serve to give some slight idea of the magnitude of the work, when we state that 400,000 cubic feet of ashlar, rubble, and concrete were worked up in the piers, and 450,000 cubic feet in the land-arches and approaches.

The most novel feature of the structure is the use of cast and wrought iron in forming the double bridge, which admirably combines the two principles of the arch and suspension, the railway being carried over the back of the ribbed arches in the usual manner, while the carriage-road and footpaths, forming a long gallery or aisle, are suspended from these arches by wrought-iron vertical rods, with horizontal tie-bars to resist the thrust. The suspension-bolts are enclosed within spandril pillars of cast-iron, which add great stiffness to the superstructure. This system of longitudinal and vertical bracing has been much admired; for it not only accomplishes the primary object of securing stability in the fabric, but at the same time, by its graceful arrangement, heightens the beauty of the structure. The arches consist of four main ribs, disposed in pairs, with a clear distance between the two inner arches of 20 feet 4 inches, forming the carriage-road, while between each of the inner and outer ribs there is a space of 6 feet 2 inches, constituting the footpaths. Each arch is cast in five separate lengths or segments, strongly bolted together. The ribs spring from horizontal plates of cast-iron, bedded and secured on the stone piers. All the abutting joints are carefully executed by machinery, and the fitting is of the most perfect kind. In order to provide for the ex-

pansion and contraction of the iron arching and to preserve the equilibrium of the piers without disturbance or racking of the parts of the bridge, it was provided that the ribs of every two adjoining arches resting on the same pier should be secured to the springing-plates by keys and joggles; whilst on the next piers, upon either side, the ribs remained free and were at liberty to expand or contract—a space being left for the purpose. Hence each arch is complete and independent within itself, the piers having simply to sustain their vertical pressure. The arches are six in number, of 126 feet span each; the two approaches to the bridge being formed of cast-iron pillars and bearers in keeping with the arches. The result is a bridge that for massive solidity and perfect finish may be pronounced unrivalled, and over which the stream of road and railway traffic may be safely carried north and south for a thousand years to come. This great work was opened on the 15th of August, 1849, and a few days after the royal train passed over, halting for a few minutes on the bridge to enable her Majesty to survey the wonderful scene below. In the course of the following year the Queen opened the majestic stone viaduct and bridge across the Tweed, upwards of 2000 feet in length, by which the last link was completed of the continuous line of railway between London and Edinburgh. Over the entrance to the Berwick station, occupying the site of the once redoubtable Castle of Berwick, so often the deadly battle-ground of the ancient Scots and English, was erected an arch, under which the royal train passed, bearing in large letters of gold the appropriate motto, "The last act of the Union."

The next great step in advance was the application of iron under its most perfect form—of wrought-iron plates, in bowstring, tubular, and box-girders, capable of bearing the heaviest railway trains at the highest speeds. The first, and, up to this time, the most complete, specimen of the simple tubular bridge is the Britannia Bridge, constructed by Mr. Robert Stephenson across the Menai Straits, which we have already so fully described,* that it is not necessary for us to enter upon any further description of that masterly work—the result of laborious calculation, founded on painstaking experiment, combined with

eminent constructive genius and high moral and intellectual courage. Although the Britannia Bridge represented the most scientific distribution of material which could be devised at the date of its construction, it has since been improved upon by the same engineer in the Victoria Bridge, now in course of construction across the river St. Lawrence near Montreal.

The Victoria Bridge is, without exception, the greatest work of the kind in the world. For gigantic proportions and vast length and strength there is nothing to compare with it in ancient or modern times. The entire bridge, with its approaches, is only about sixty yards short of *two miles*. It is five times longer than the Britannia across the Menai Straits, seven and a half times longer than Waterloo Bridge, and more than ten times longer than the new Chelsea Bridge across the Thames! The Victoria has not less than twenty-four spans of 242 feet each, and one great central span—itsself an immense bridge—of 330 feet. The road is carried within iron tubes 60 feet above the level of the St. Lawrence, which runs beneath at a speed of about ten miles an hour, and in winter brings down the ice of some two thousand miles of lakes and upper rivers, with their numerous tributaries. The weight of iron in the tubes will be upwards of ten thousand tons, supported on massive stone piers which contain some six, some eight thousand tons each of solid masonry.

So gigantic a work, involving so heavy an expenditure, has not been projected without sufficient cause. The Grand Trunk Railway of Canada—one of the greatest national enterprises ever entered on—is upwards of 1100 miles in length, opening up a vast extent of fertile territory for the purposes of future immigration, and, by connecting the settled provinces of Western Canada with the seaboard States of the American Union, calculated to afford full scope for the development of the industrial resources of that magnificent colony. Without the Victoria Bridge the system of communication would have been manifestly incomplete. The extensive series of Canadian railways on the north side of the St. Lawrence, terminating opposite Montreal, would, for all purposes of through traffic, be virtually sealed up during the six months of the year that the St. Lawrence is closed against navigation by the ice; and the Grand Trunk system must neo-

* Quarterly Review, vol. lxxxv., p. 399.—Living Age, No. 301.

essarily have remained to a great extent nugatory, in consequence of the province being cut off from the coast, to which the commerce of Canada naturally tends.

The particular kind of structure to be adopted formed the subject of considerable preliminary discussion. Even after the design of a tubular bridge had been adopted, and the piers were commenced, the plan was made the subject of severe criticism, on the ground of its alleged excessive cost. It therefore became necessary for Mr. Stephenson to vindicate the propriety of his design in a report to the directors of the railway, in which he satisfactorily proved that as respects strength, efficiency, and economy, with a view to permanency, the plan of the Victoria Bridge is unimpeachable. Various modes were proposed for spanning the St. Lawrence. The suspension bridge, such as that over the Niagara, was found inapplicable for several reasons, but chiefly because of its defective rigidity, which greatly limits the speed and weight of trains, and consequently the amount of traffic which can be passed over such a bridge. Thus, taking the length of the Victoria Bridge into account, it was found that not more than 20 trains could pass within the 24 hours, a number insufficient for the accommodation of the anticipated traffic. To introduce such an amount of material into the suspension bridge as would supply increased rigidity, would only be approximating to the original beam, and neutralizing any advantages in point of cheapness which might be derivable from this form of structure, without securing the essential stiffness and strength. Iron arches were also considered inapplicable, because of the large headway required for the passage of the ice in winter, and the necessity which existed for keeping the springing of the arches clear of the water line. This would have involved the raising of the entire road, and a largely increased expenditure on the upper works. The question was therefore reduced to the consideration of the kind of *horizontal beam or girder* to be employed.

Horizontal girders are of three kinds. The *Tubular* is constructed of riveted rectangular boiler plates. Where the span is large, the road passes within the tube; where the span is comparatively small, the roadway is supported by two or more rectangular beams. Next there is the *Lattice girder*,

borrowed from the loose rough timber bridges of the American engineers, consisting of a top and bottom flange connected by a number of flat iron bars, riveted across each other at a certain angle, the roadway resting on the top, or being suspended at the bottom between the lattice on either side. One of the best known specimens of this bridge is the fine work erected by Sir John Macneil on the line of the Dublin and Drogheda Railway, over the river Boyne near the town of Drogheda; its centre span being of 264 feet. Bridges on the same construction are now extensively manufactured in this country for crossing rivers in India, and are specially designed with a view to their easy transport and erection. The *Trellis* or *Warren girder* is a modification of the same plan, consisting of a top and bottom flange, with a connecting web of diagonal flat bars, forming a complete system of triangulation—hence the name of “*Triangular girder*,” by which it is generally known. The merit of this form consists in its comparative rigidity, strength, lightness, and economy of material. These bridges are also extensively employed in spanning the broad rivers of India. One of the best specimens in this country is the Crumlin viaduct, 200 feet high at one point, which spans the river and valley of the Ebbw near the village of Crumlin in South Wales. The viaduct is about a third of a mile long, divided into two parts by a ridge of hills which runs through the centre of the valley—each part forming a separate viaduct, the one of seven equal spans of 150 feet, the other of three spans of the same diameter. This bridge has been very skillfully designed and constructed by Mr. T. W. Kennard, and, by reason of its great dimensions and novel arrangements, is entitled to be regarded as one of the most remarkable engineering works of the day.

“In calculating the strength of these different classes of girders,” Mr. Stephenson observes, “one ruling principle appertains, and is common to all of them. Primarily and essentially, the ultimate strength is considered to exist in the top and bottom,—the former being exposed to a compression force by the action of the load, and the latter to a force of tension; therefore, whatever be the class or denomination of girders, they must all be alike in amount of effective material in these members, if their spans and depths are the

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same, and they have to sustain the same amount of load. Hence, the question of comparative merit amongst the different classes of construction of beams or girders, is really narrowed to the method of connecting the top and bottom webs, so called." In the tubular system the connexion is effected by continuous boiler plates riveted together; and in the lattice and trellis bridges by flat iron bars, more or less numerous, forming a series of struts, and ties. Those engineers who advocate the employment of the latter form of construction, set forth as its principal advantage the saving of material which is effected by employing bars instead of iron plates; whereas Mr. Stephenson and his followers urge, that in point of economy the boiler plate side is equal to the bars, whilst in point of effective strength and rigidity it is decidedly superior. To show the comparative economy of material, he contrasts the lattice girder bridge over the river Trent, on the Great Northern Railway near Newark, with the tubes of the Victoria Bridge which are now in course of construction. In the former case, where the span is 240½ feet, and the bridge 13 feet wide, the weight including bearings is 292 tons; in the latter, where the span is 242 feet, the width of the tube 16 feet, the weight including bearings is 275 tons, showing a balance in favor of the Victoria Tube of 17 tons. The comparison between the Newark Dyke Bridge and the Tubular Bridge over the river Aire is equally favorable to the latter; and no one can have travelled over the Great Northern line to York without noting that as respects rigidity under the passing train, the Tubular Bridge is decidedly superior. It is ascertained that the deflection caused by a passing load is considerably greater in the former case; and Mr. Stephenson is also of opinion that the sides of all trellis or lattice girders are useless, except for the purpose of connecting the top and bottom, and keeping them in their position. They depend upon their connexion with the top and bottom webs for their own support, and since they could not sustain their shape, but would collapse immediately on their being disconnected from their top and bottom members, it is evident that they add to the strain upon them, and consequently to that extent reduce the ultimate strength of the beams. "I admit," he adds, "that there is no formula for valuing the *solid* sides for strains, and that at present we only ascribe to

them the value or use of connecting the top and bottom; yet we are aware that, from their continuity and solidity, they are of value to resist horizontal and many other strains, independently of the top and bottom, by which they add very much to the stiffness of the beam; and the fact of their containing more material than is necessary to connect the top and bottom webs, has by no means been fairly established." Another important advantage of the Tubular bridge over the Trellis or Lattice structure, as pointed out by Mr. Brunel and Mr. Edwin Clarke, consists in its greater safety in event of a train running off the line,—a contingency which has more than once occurred on a tubular bridge without detriment, whereas in the event of such an accident occurring on a Trellis or Lattice bridge, it must, Mr. Clarke says, "infallibly be destroyed." Where the proposed bridge is of the unusual length of a mile and a quarter, it is obvious that this consideration must have had no small weight with the Directors, who eventually decided upon proceeding with the Tubular Bridge according to Mr. Stephenson's original design.

From the first projection of the Victoria Bridge, the difficulties of executing such a work across a wide river, down which an avalanche of ice rushes to the sea every spring, was pronounced almost insurmountable by those best acquainted with the locality. The ice of two thousand miles of inland lakes and upper rivers, besides their tributaries—many of which exceed the Thames in length, depth, and volume of water—is then poured down stream, and in the neighborhood of Montreal especially, it is often piled up to the height of from forty to fifty feet, placing the surrounding country under water, and doing severe damage to the massive stone buildings along the noble river front of the city. To resist so prodigious a pressure, it was necessary that the piers of the proposed bridge should be of the most solid and massive description. Their foundations are placed in the solid rock; for none of the artificial methods of obtaining foundations, suggested by some critical engineers for cheapness' sake, were found practicable in this case. Where the force exercised against the piers was likely to be so great, it was felt that timber ice-breakers, timber or cast-iron piling, or even rubble-work, would have proved but temporary expedients. The two centre piers are

eighteen feet wide, and the remaining twenty-two piers fifteen feet. To arrest and break the ice, an inclined plane, composed of great blocks of stone, was added to the up-river side of each pier—each block weighing from seven to ten tons, and the whole firmly clamped together with iron rivets.

To convey some idea of the immense force which these piers are required to resist, we quote a brief account received from Mr. Alexander Ross, the principal engineer superintending the works, of the scene which occurred at the breaking up of the ice in March last, when the pressure of the pack was unusually severe. It must be premised that fourteen out of the twenty-four piers were then finished, together with the formidable abutments and approaches to the bridge. The ice in the river began to show signs of weakness on the 29th of March, but it was not until the 31st that a general movement became observable, which continued for an hour, when it suddenly stopped, and the water rose rapidly. On the following day, at noon, a grand movement commenced; the waters rose about four feet in two minutes, up to a level with many of the Montreal streets. The fields of ice at the same time were suddenly elevated to an incredible height; and so overwhelming were they in appearance, that crowds of the townspeople, who had assembled on the quays to watch the progress of the flood, ran for their lives. This movement lasted about twenty minutes, during which the jammed ice destroyed several portions of the quay-wall, grinding the hardest blocks to atoms. The embanked approaches to the Victoria Bridge had tremendous forces to resist. In the full channel of the stream, the ice in its passage between the piers was broken up by the force of the blow immediately on its coming in contact with the cutwaters. Sometimes thick sheets of ice were seen to rise up and rear on end against the piers, but by the force of the current they were speedily made to roll over into the stream, and in a moment after were out of sight. For the two next days the river was still high, until on the 4th of April the waters seemed suddenly to give way, and by the following day the river was flowing clear and smooth as a millpond, nothing of winter remaining except the masses of bodge ice which were strewn along the shores of the stream. On examination of the piers of the

bridge it was found that they had admirably resisted the tremendous pressure; and though the timber "cribwork" erected to facilitate the placing of floating pontoons to form the dams, was found considerably disturbed and in some places seriously damaged, the piers, with the exception of one or two heavy stone blocks which were still unfinished, escaped uninjured. One heavy block of many tons' weight was carried to a considerable distance, and must have been torn out of its place by sheer force, as several of the broken fragments were left in the pier. We may add that already two of the tubes have been placed *in situ* upon the piers, and that this magnificent work is expected to be completed and opened for traffic by the beginning of 1860.

We have not left ourselves space to do more than allude to Mr. Brunel's admirable combination of the principles of the tubular and suspension bridges in the fine structures recently erected by him at Chepstow and Saltash. The latter bridge is of even greater length than the Britannia. Including the land openings it is not less than 2200 feet long, having nineteen openings, two of which are of the immense span of 455 feet each. These two main openings are spanned by longitudinal beams, suspended from arched tubes of wrought-iron plates by long-linked tension chains, rendered rigid by vertical struts and diagonal bracing. They are both works of great merit, deservedly admired by engineers.

The tubular bridge system has even been extended to Egypt, the land of old Cheops and the Pyramids. The principal feature of the two extensive bridges on the Egyptian railway recently completed is, that the road is carried upon the top of the tubes instead of in the interior. The longer of the two is over the Damietta branch of the Nile near Benha. It contains eight spans or openings of 80 feet each, and two centre spans, which are formed by one of the largest iron swing bridges ever constructed—the total length of the swing-beam being 157 feet, and leaving a clear waterway on either side of the central pier of 60 feet. The foundations of this bridge offer another exemplification of the extended use of iron in structures of this sort, for they consist of wrought-iron cylinders filled in with concrete, and sunk by means of a remarkable pneumatic process which we will briefly describe.

The securing of firm foundations for piers has always been a point of the greatest importance with bridge-builders. When the stream could not be diverted and the bed laid bare for the purpose of getting in the foundations—as is supposed to have been done in the case of Old London Bridge—the early builders adopted the expedient of throwing loose rubble-stones into the river until they were sufficiently high and solid to build upon. They were then surrounded with piles to prevent the foundations washing away. Labelye, in constructing Westminster Bridge, employed the method invented by French engineers of getting in the foundations by means of caissons or watertight floating chests, prepared on shore and floated over the points at which it was proposed to build, where they were loaded and sunk upon as flat a bottom as could be dredged. The masonry was then built up within the casing to high-water mark, when the sides of the caisson were removed, and the work was protected by piles driven side by side all round the pier. The same system was adopted by Mylne in getting in the foundations of Blackfriars Bridge; but both have proved defective, and the failure in each case was greatly hastened by the removal of the numerous piers of Old London Bridge, which increased the velocity of the flowing tide and the consequent "scour" of the stream in the bed of the river above-bridge. In securing the foundations of the Waterloo and New London Bridges, Rennie adopted the costly but effectual plan of the coffer-dam—that is, enclosing a sufficient space within double or treble rows of piles driven deep into the bed of the river. The enclosure was made watertight by planking and clay puddle packed between the piles, and the water within the dam was pumped out by means of engine power. The bed of the river, thus exposed, was dug out to the proper depth, when timber piles were driven deep beneath the entire foundation, upon which the solid masonry was then erected. The same plan continues to be pursued in many cases where great solidity of foundation in river-beds is required.

Iron began to be introduced for the purpose of securing foundations, in cases where the superstructure was of a lighter character, or where sands, mud, or bog, had to be crossed. Hence Dr. Pott's invention of cylinder piles, which consisted in employing iron cylinders,

placed in a position for sinking, the lower end being open, and then exhausting them by means of a pneumatic apparatus. The contents of the tube, whether of air or fluid, were thus sucked out, and the tube was forced downwards by simple atmospheric pressure. A succession of piles might be placed over that first sunk, by means of flanges, or other joints, so that piles of any length could be employed. In the case of Mr. Brunlees' disc piles, upon which the Morecombe Bay iron viaducts are erected, the reverse process is employed, and the air, water, and sand, instead of being drawn out of the cylinders by exhaustion, are forced out during a slight rotating motion of the piles, which gradually descend to their proper depth. By one or other of these methods, it would even be possible to obtain foundations for a lighthouse on so treacherous a basis as the Goodwin Sands, whilst for crossing the sandy, muddy beds of broad Indian rivers, the invention is calculated to be of great value. Mitchell's screw-pile is another favorite method of employing iron in securing firm foundations in treacherous ground, the pile being so constructed as to be capable of being screwed down to almost any depth. But the most remarkable application of iron for the purpose of securing foundations in difficult ground at great depths, is that which has been recently adopted by Mr. Hughes, and was first employed by him in constructing the piers of the new bridge over the Medway, at Rochester. It was proposed to build the piers of the bridge upon a series of cast-iron cylinders, each seven feet in diameter: and it was originally intended to force them to a sufficient depth into the bed of the river (which indicated soft clay, sand, and gravel) by means of Dr. Pott's pneumatic process, which had succeeded in similar cases. But it was discovered, soon after the works commenced, that the bed of the stream was encumbered in many places by the ruins of an ancient bridge, which history records as having been taken down some five hundred years ago. On examination the bottom was found to be a compact mass of Kentish rag stone, through which it was impossible to force the cylinders by atmospheric pressure. It was then determined to reverse the process, and to give to each cylindrical pile the character of a diving-bell, keeping the interior clear of water by forcing air into it by means of a double-acting pump driven by a steam-engine, so that

the workmen should be enabled to proceed with the excavations in the interior of the cylinder, and afterwards with the masonry of the foundations. To enable the workmen to pass into and out of the cylinder, and to throw out the excavated stuff as well as to introduce the necessary building materials, without removing the pressure from the water held down by the pneumatic force at the bottom of the excavation, the top of the cylinder was fitted with a moveable wrought-iron cover capable of being securely bolted to it, and over this were placed two cast-iron chambers, or air-locks. These chambers had two openings, one towards the interior, the other towards the exterior, both being securely fitted with an air-tight flap, or valve. After a loaded bucket had been raised from the bottom, by means of a light wrought-iron crane fixed within the cylinder and drawn through the opening referred to, the cover was hermetically closed, when the outer aperture was opened and the stuff cast out. Building materials were introduced by the same process, and the compression of the air within the interior of the cylinder, in which the men were at work, perhaps some twenty feet below water, was strictly preserved. Strong glass lenses were fitted into the cylinder cover, and in the chambers of the air-locks, to give light to the workmen, but when at a considerable depth candles were constantly used.

As the excavation proceeded, the cylinder descended, until the pile was gradually sunk to the desired depth. The piles of the Rochester Bridge were thus carried down thirty feet into the river's bed before the building commenced; in Mr. Stephenson's bridge across the Nile, they are sunk thirty-three feet through soil of a peculiarly shifting character; but in Mr. Brunel's Saltash Bridge they were sunk not less than ninety feet, a depth of foundation that would have been considered fabulous but a few years ago. In the latter case, an exterior cylinder was also employed, which was afterwards withdrawn when the foundations had been secured. It is worthy of remark that the cost of getting in foundations by this process has been very considerably reduced—the total cost of completing those of the Rochester Bridge to four feet above the water-line being effected at less than one-half of the estimated cost of coffer-dams alone. The effect of the great atmospheric pressure upon the workmen em-

ployed within the cylinder, is sometimes serious. When the pile has descended to a considerable depth, it is possible to work for only a comparatively short time. On entering the cylinder, great pain is felt in the ears, blood sometimes runs from the nose and ears, while the breathing is considerably affected; persons of weak lungs are found quite unfitted for the work. The men who persevere are said to experience an immense sharpening of the appetite, and consume increased quantities of animal food—doubtless caused by the greater waste produced by the increased quantity of oxygen inspired.

The last great project in iron bridge building that we have heard of—and a project it is likely for some time to remain—is a tubular bridge across the Straits of Dover. A French engineer, M. Thomé de Gamond, having projected a tunnel under the sea between England and France, which he states has received the favorable consideration of the French government, Mr. Boyd, not to be outdone in daring, projects his bridge over the sea from Shakspeare's Cliff to Cape Grinex. Mr. Boyd proposes a bridge of iron tubes of 500 feet span, laid upon 190 towers 300 feet high, to be constructed at an estimated cost of £30,000,000 sterling. Apart from the question of practicability, we greatly doubt the utility of such a bridge. The entire number of persons annually travelling between England and all the ports of France, does not amount to 250,000 persons, or less than four days' traffic over London Bridge. Seventeen millions of persons annually pass through the railway stations on the south of the Thames, the greater number of whom have to cross the bridges to and from the north side of the river. We are ready to recognise the necessity of an iron railway bridge across the Thames to a convenient station on the north bank—a measure which would, more than any other project, relieve the "block" of the bridges, and the crowded thoroughfares leading to and from the City. But there is no such pressure of traffic across the Channel, the existing means being more than sufficient for its accommodation. To this we must add that there is considerable force in the observation of a celebrated English wit to a Frenchman on the subject of Anglo-French relations: "The best thing that I know of between England and France is—the sea."

From Blackwood's Magazine.
THE IRON SHROUD.

BY WILLIAM MUDFORD.

THE castle of the Prince of Tolfi was built on the summit of the towering and precipitous rock of Scylla, and commanded a magnificent view of Sicily in all its grandeur. Here, during the wars of the middle ages, when the fertile plains of Italy were devastated by hostile factions, those prisoners were confined, for whose ransom a costly price was demanded. Here, too, in a dungeon, excavated deep in the solid rock, the miserable victim was immured, whom revenge pursued,—the dark, fierce, and un pitying revenge of an Italian heart.

VIVENZIO—the noble and the generous, the fearless in battle, and the pride of Naples in her sunny hours of peace—the young, the brave, the proud Vivenzio, fell beneath this subtle and remorseless spirit. He was the prisoner of Tolfi, and he languished in that rock-encircled dungeon, which stood alone, and whose portals never opened twice upon a living captive.

It had the semblance of a vast cage, for the roof, and floor, and sides, were of iron, solidly wrought, and spaciouly constructed. High above there ran a range of seven grated windows, guarded with massy bars of the same metal, which admitted light and air. Save these, and the tall folding-doors beneath them which occupied the centre, no chink, or chasm, or projection, broke the smooth black surface of the walls. An iron bedstead, littered with straw, stood in one corner: and beside it a vessel with water, and a coarse dish filled with coarser food.

Even the intrepid soul of Vivenzio shrank with dismay as he entered this abode, and heard the ponderous doors triple locked by the silent ruffians who conducted him to it. Their silence seemed prophetic of his fate, of the living grave that had been prepared for him. His menaces and his entreaties, his indignant appeals for justice, and his impatient questioning of their intentions, were alike vain. They listened, but spoke not. Fit ministers of a crime that should have no tongue!

How dismal was the sound of their retiring steps! And, as their faint echoes died along the winding passages, a fearful presage grew within him, that never more the face, or voice, or tread of man, would greet his senses. He

had seen human beings for the last time! And he had looked his last upon the bright sky, and upon the smiling earth, and upon a beautiful world he loved, and whose minion he had been! Here he was to end his life—a life he had just begun to revel in! And by what means? By secret poison? or by murderous assault? No—for then it would have been needless to bring him thither. Famine perhaps—a thousand deaths in one! It was terrible to think of it; but it was yet more terrible to picture long, long years of captivity, in a solitude so appalling, a loneliness so dreary, that thought, for want of fellowship, would lose itself in madness, or stagnate into idiocy.

He could not hope to escape, unless he had the power, with his bare hands, of rending asunder the solid iron walls of his prison. He could not hope for liberty from the relenting mercies of his enemy. His instant death, under any form of refined cruelty, was not the object of Tolfi, for he might have inflicted it, and he had not. It was too evident, therefore, he was reserved for some premeditated scheme of subtle vengeance; and what vengeance could transcend in fiendish malice, either the slow death of famine, or the still slower one of solitary incarceration, till the last lingering spark of life expired, or till reason fled, and nothing should remain to perish but the brute functions of the body?

It was evening when Vivenzio entered his dungeon, and the approaching shades of night wrapped it in total darkness, as he paced up and down, revolving in his mind these horrible forebodings. No tolling bell from castle, or from neighboring church or convent, struck upon his ear to tell how the hours passed. Frequently he would stop and listen for some sound that might betoken the vicinity of man; but the solitude of the desert, the silence of the tomb, are not so still and deep as the oppressive desolation by which he was encompassed. His heart sank within him, and he threw himself dejectedly down upon his couch of straw. Here sleep gradually obliterated the consciousness of misery, and bland dreams wafted his delighted spirit to scenes which were once glowing realities for him, in whose ravishing illusions he soon lost the remembrance that he was Tolfi's prisoner.

When he awoke, it was daylight; but how long he had slept he knew not. It might be early morning, or it might be sultry noon, for

he could measure time by no other note of its progress than light and darkness. He had been so happy in his sleep, amid friends who loved him, and the sweeter endearments of those who loved him as friends could not, that in the first moments of waking, his startled mind seemed to admit the knowledge of his situation, as if it had burst upon it for the first time, fresh in all its appalling horrors. He gazed round with an air of doubt and amazement, and took up a handful of the straw upon which he lay, as though he would ask himself what it meant. But memory, too faithful to her office, soon unveiled the melancholy past, while reason, shuddering at the task, flashed before his eyes the tremendous future. The contrast overpowered him. He remained for some time lamenting, like a truth, the bright visions that had vanished and recoiling from the present, which clung to him as a poisoned garment.

When he grew more calm, he surveyed his gloomy dungeon. Alas! the stronger light of day only served to confirm what the gloomy indistinctness of the preceding evening had partially disclosed, the utter impossibility of escape. As however his eyes wandered round and round, and from place to place, he noticed two circumstances which excited his surprise and curiosity. The one, he thought, might be fancy; but the other was positive. His pitcher of water, and the dish which contained his food, had been removed from his side while he slept, and now stood near the door. Were he even inclined to doubt this, by supposing he had mistaken the spot where he saw them over night, he could not, for the pitcher now in his dungeon was neither of the same form nor color as the other, while the food was changed for some other of better quality. He had been visited, therefore, during the night. But how had the person obtained entrance? Could he have slept so soundly, that the unlocking and opening of those ponderous portals were effected without waking him? He would have said this was not possible, but that in doing so, he must admit a greater difficulty, an entrance by other means, of which he was convinced there existed none. It was not intended, then, that he should be left to perish from hunger. But the secret and mysterious mode of supplying him with food, seemed to indicate he was to have no opportunity of communicating with a human being.

The other circumstance which had attracted his notice, was the disappearance, as he believed of one of the seven grated windows that ran along the top of his prison. He felt confident that he had observed and counted them; for he was rather surprised at their number, and there was something peculiar in their form, as well as in the manner of their arrangement, at unequal distances. It was so much easier, however, to suppose he was mistaken, than that a portion of the solid iron, which formed the walls, could have escaped from its position, that he soon dismissed the thought from his mind.

Vivenzio partook of the food that was before him, without apprehension. It might be poisoned; but if it were he knew he could not escape death, should such be the design of Toffi, and the quickest death would be the speediest release.

The day passed wearily and gloomily; though not without a faint hope that, by keeping watch at night, he might observe when the person came again to bring him food, which he supposed he would do in the same way as before. The mere thought of being approached by a living creature, and the opportunity it might present of learning the doom prepared, or preparing, for him, imparted some comfort. Besides, if he came alone, might he not in a furious onset overpower him? Or he might be accessible to pity, or the influence of such munificent rewards as he could bestow, if once more at liberty and master of himself. Say he were armed. The worst that could befall, if nor bribe, nor prayers, nor force prevailed, was a friendly blow, which, though dealt in a damned cause, might work a desired end. There was no chance so desperate, but it looked lovely in Vivenzio's eyes, compared with the idea of being totally abandoned.

The night came, and Vivenzio watched. Morning came, and Vivenzio was confounded. He must have slumbered without knowing it. Sleep must have stolen over him when exhausted by fatigue, and in that interval of feverish repose, he had been baffled; for there stood his replenished pitcher of water, and there his day's meal! Nor was this all. Casting his looks towards the windows of his dungeon, he counted but FIVE! Here was no deception; and he was now convinced there had been none the day before. But what did all this portend? Into what strange and

mysterious den had he been cast? He gazed till his eyes ached; he could discover nothing to explain the mystery. That it was so, he knew. Why it was so, he racked his imagination in vain to conjecture. He examined the doors. A simple circumstance convinced him they had not been opened.

A wisp of straw which he had carelessly thrown against them the preceding day, as he paced to and fro, remained where he had cast it, though it must have been displaced by the slightest motion of either of the doors. This was evidence that could not be disputed; and it followed there must be some secret machinery in the walls by which a person could enter. He inspected them closely. They appeared to him one solid and compact mass of iron; or joined if joined they were, with such nice art, that no mark of division was perceptible. Again and again he surveyed them—and the floor—and the roof—and that range of visionary windows, as he was now almost tempted to consider them he could discover nothing, absolutely nothing, to relieve his doubts or satisfy his curiosity. Sometimes he fancied that altogether the dungeon had a more contracted appearance—that it looked smaller; but this he ascribed to fancy, and the impression naturally produced upon his mind by the undeniable disappearance of two of the windows.

With intense anxiety, Vivenzio looked forward to the return of night; and as it approached, he resolved that no treacherous sleep should again betray him. Instead of seeking his bed of straw, he continued to walk up and down his dungeon till daylight, straining his eyes in every direction through the darkness, to watch for any appearances that might explain these mysteries. While thus engaged, and as nearly as he could judge (by the time that afterwards elapsed before the morning came in), about two o'clock, there was a slight tremulous motion of the floors. He stooped. The motion lasted nearly a minute; but it was so extremely gentle, that he almost doubted whether it was real, or only imaginary. He listened. Not a sound could be heard. Presently, however, he felt a rush of cold air blow upon him; and dashing towards the quarter whence it seemed to proceed, he stumbled over something which he judged to be the water ewer. The rush of cold air was no longer perceptible; and as Vivenzio stretched out his hands, he

found himself close to the wall. He remained motionless for a considerable time; but nothing occurred during the remainder of the night to excite his attention, though he continued to watch with unabated vigilance.

The first approaches of the morning were visible through the grated windows, breaking, with faint divisions of light, the darkness that still pervaded every other part, long before Vivenzio was enabled to distinguish any object in his dungeon. Instinctively and fearfully he turned his eyes, hot and inflamed with watching towards them. There were four! He could see only four: but it might be that some intervening object prevented the fifth from becoming perceptible; and he waited impatiently to ascertain if it were so. As the light strengthened, however, and penetrated every corner of the cell, other objects of amazement struck his sight. On the ground lay the broken fragments of the pitcher he had used the day before, and at a small distance from them, nearer to the wall, stood the one he had noticed the first night. It was filled with water, and beside it was his food. He was now certain that, by some mechanical contrivance, an opening was obtained through the iron wall, and that through this opening the current of air had found entrance. But how noiseless! For had a feather almost waved at the time, he must have heard it. Again he examined that part of the wall; but both to sight and touch it appeared one even and uniform surface, while to repeated and violent blows there was no reverberating sound indicative of hollowness.

This perplexing mystery had for a time withdrawn his thoughts from the windows; but now, directing his eyes again towards them, he saw that the fifth had disappeared in the same manner as the preceding two, without the least distinguishable alteration of external appearances. The remaining four looked as the seven had originally looked; that is, occupying, at irregular distances, the top of the wall on that side of the dungeon. The tall folding-door, too, still seemed to stand beneath, in the centre of these four, as it had at first stood in the centre of the seven. But he could no longer doubt, what, on the preceding day, he fancied might be the effect of visual deception. The dungeon was smaller. The roof had lowered—and the opposite ends had contracted the intermediate distance by a space equal, he thought, to that over which

the three windows had extended. He was bewildered in vain imaginings to account for these things. Some frightful purpose—some devilish torture of mind or body—some unheard-of device for producing exquisite misery, 'urked, he was sure, in what had taken place.

Oppressed with this belief, and distracted more by the dreadful uncertainty of whatever fate impended, than he could be dismayed, he thought, by the knowledge of the worst, he sat ruminating, hour after hour, yielding his fears in succession to every haggard fancy. At last a horrible suspicion flashed suddenly across his mind and he started up with a frantic air. "Yes!" he exclaimed, looking wildly round his dungeon, and shuddering as he spoke—"Yes! it must be so! I see it!—I feel the maddening truth like scorching flames upon my brain! Eternal God!—support me! it must be so!—Yes, yes, *that* is to be my fate! Yon roof will descend!—these walls will hem me round—and slowly, slowly, crush me in their iron arms! Lord God! look down upon me, and in mercy strike me with instant death! Oh, fiend—oh, devil—is this your revenge?"

He dashed himself upon the ground in agony;—tears burst from him, and the sweat stood in large drops upon his face—he sobbed aloud—he tore his hair—he rolled about like one suffering intolerable anguish of body, and would have bitten the iron floor beneath him; he breathed fearful curses upon Tolfi, and the next moment passionate prayers to heaven for immediate death. Then the violence of his grief became exhausted, and he lay still, weeping as a child would weep. The twilight of departing day shed its gloom around him ere he arose from that posture of utter and hopeless sorrow. He had taken no food. Not one drop of water had cooled the fever of his parched lips. Sleep had not visited his eyes for six-and-thirty hours. He was faint with hunger; weary with watching, and with the excess of his emotions. He tasted of his food; he drank with avidity of the water; and reeling like a drunken man to his straw, cast himself upon it to brood again over the appalling image that had fastened itself upon his almost frenzied thoughts.

He slept. But his slumbers were not tranquil. He resisted, as long as he could, their approach; and when, at last, enfeebled nature yielded to their influence, he found no obliv-

ion from his cares. Terrible dreams haunted him—ghastly visions harrowed up his imagination—he shouted and screamed, as if he already felt the dungeon's ponderous roof descending on him—he breathed hard and thick, as though writhing between its iron walls. Then would he spring up—stare wildly about him—stretch forth his hands, to be sure he yet had space enough to live—and, muttering some incoherent words, sink down again, to pass through the same fierce vicissitudes of delirious sleep.

The morning of the fourth day dawned upon Vivenzio. But it was high noon before his mind shook off its stupor, or he awoke to a full consciousness of his situation. And what a fixed energy of despair sat upon his pale features, as he cast his eyes upwards, and gazed upon the THREE windows that now alone remained! The three!—there were no more!—and they seemed to number his own allotted days. Slowly and calmly he next surveyed the tops and sides, and comprehended all the meaning of the diminished height of the former, as well as of the gradual approximation of the latter. The contracted dimensions of his mysterious prison were now too gross and palpable to be the juggle of his heated imagination. Still lost in wonder at the means, Vivenzio could put no cheat upon his reason, as to the end. By what horrible ingenuity it was contrived, that walls, and roof, and windows, should thus silently and imperceptibly, without noise, and without motion almost, fold, as it were, within each other, he knew not. He only knew they did so; and he vainly strove to persuade himself it was the intention of the contriver, to rack the miserable wretch who might be immured there with anticipation, merely, of a fate, from which, in the very crisis of his agony, he was to be reprieved.

Gladly would he have clung even to this possibility, if his heart would have let him; but he felt a dreadful assurance of its fallacy. And what matchless inhumanity it was to doom the sufferer to such lingering torments, to lead him day by day to so appalling a death, unsupported by the consolations of religion, unvisited by any human being, abandoned to himself, deserted of all, and denied even the sad privilege of knowing that his cruel destiny would awaken pity! Alone he was to periah!—alone he was to wait a slow coming tor-

ture, whose most exquisite pangs would be inflicted by that very solitude and that tardy coming!

"It is not death I fear," he exclaimed, "but the death I must prepare for! Methinks, too, I could meet even that—all horrible and revolting as it is—if it might overtake me now. But where shall I find fortitude to tarry till it come? How can I outlive the three long days and nights I have to live? There is no power within me to bid the hideous spectre hence—none to make it familiar to my thoughts; or myself, patient of its errand. My thoughts, rather, will flee from me, and I grow mad in looking at it. Oh! for a deep sleep to fall upon me! That so, in death's likeness, I might embrace death itself, and drink no more of the cup that is presented to me, than my fainting spirit has already tasted!"

In the midst of these lamentations, Vivenzio noticed that his accustomed meal, with the pitcher of water, had been conveyed as before, into his dungeon. But this circumstance no longer excited his surprise. His mind was overwhelmed with others of a far greater magnitude. It suggested however, a feeble hope of deliverance; and there is no hope so feeble as not to yield some support to a heart bending under despair. He resolved to watch, during the ensuing night, for the signs he had before observed; and should he again feel the gentle, tremulous motion of the floor, or the current of air, to seize that moment for giving audible expression to his misery. Some person must be near him, and within reach of his voice, at the instant when his food was supplied; some one, perhaps, susceptible of pity. Or if not, to be told even that his apprehensions were just, and that his fate was to be what he foreboded, would be preferable to a suspense which hung upon the possibility of his worst fears being visionary.

The night came; and as the hour approached when Vivenzio imagined he might expect the signs, he stood fixed and silent as a statue. He feared to breathe, almost, lest he might lose any sound which would warn him of their coming. While thus listening, with every faculty of mind and body strained to an agony of attention, it occurred to him he should be more sensible of the motion, probably, if he stretched himself along the iron floor. He accordingly laid himself softly down, and had not been long in that position when—yes,

he was certain of it—the floor moved under him! He sprang up, and in a voice suffocated nearly with emotion, called aloud. He paused—the motion ceased—he felt no stream of air—all was hushed—no voice answered to his—he burst into tears, and as he sank to the ground, in renewed anguish, exclaimed—"Oh, my God! my God! You alone have power to save me now, or strengthen me for the trial you permit."

Another morning dawned upon the wretched captive, and the fatal index of his doom met his eyes. Two windows!—and *two* days—and all would be over! Fresh food—fresh water! The mysterious visit had been paid, though he had implored it in vain. But how awfully was his prayer answered in what he now saw! The roof of the dungeon was within a foot of his head. The two ends were so near, that in six paces he trod the space between them. Vivenzio shuddered as he gazed, and as his steps traversed the narrowed area. But his feelings no longer vented themselves in frantic wailings. With folded arms, and clenched teeth, with eyes that were bloodshot from much watching, and fixed with a vacant glare upon the ground, with a hard quick breathing, and a hurried walk, he strode backwards and forwards in silent musing for several hours. What mind shall conceive, what tongue utter, or what pen describe the dark and terrible character of his thoughts? Like the fate that moulded them, they had no similitude in the wide range of this world's agony for man. Suddenly he stopped, and his eyes were riveted upon that part of the wall which was over his bed of straw. Words are inscribed there! A human language traced by a human hand! He rushes towards them; but his blood freezes as he reads:—

"I, Ludovico Sforza, tempted by the gold of the Prince of Tolfi, spent three years in contriving and executing this accursed triumph of my art. When it was completed, the perfidious Tolfi, more devil than man, who conducted me hither one morning, to be a witness, as he said, of its perfection, doomed me to be the first victim of my own pernicious skill; lest, as he declared, I should divulge the secret, or repeat the effort of my ingenuity. May God pardon him, as I hope he will me, that ministered to his unhallowed purpose! Miserable wretch, who'er thou art, that readest these lines, fall on thy knees,

and invoke, as I have done, His sustaining mercy, who alone can nerve thee to meet the vengeance of Tolf, armed with this tremendous engine which, in a few hours, must crush *you*, as it will the needy wretch who made it."

A deep groan burst from Vivenzio. He stood, like one transfixed, with dilated eyes, expanded nostrils, and quivering lips, gazing at this fatal inscription. It was as if a voice from the sepulchre had sounded in his ears, "Prepare!" Hope forsok him. There was his sentence, recorded in those dismal words. The future stood unveiled before him, ghastly and appalling. His brain already feels the descending horror—his bones seem to crack and crumble in the mighty grasp of the iron walls! Unknowing what it is he does, he fumbles in his garment for some weapon of self-destruction. He clenches his throat in his convulsive gripe, as though he would strangle himself at once. He stares upon the walls, and his warring spirit demands, "Will they not anticipate their office if I dash my head against them?" An hysterical laugh chokes him as he exclaims, "Why should I? He was but a man who died first in their fierce embrace; and I should be less than man not to do as much!"

The evening sun was descending, and Vivenzio beheld its golden beams streaming through one of the windows. What a thrill of joy shot through his soul at the sight? It was a precious link, that united him, for the moment, with the world beyond. There was ecstasy in the thought. As he gazed, long and earnestly, it seemed as if the windows had lowered sufficiently for him to reach them. With one bound he was beneath them—with one wild spring he clung to the bars. Whether it was so contrived, purposely to madden with delight the wretch who looked, he knew not; but, at the extremity of a long vista, cut through the solid rocks, the ocean, the sky, the setting sun, olive groves, shady walks, and, in the farthest distance, delicious glimpses of magnificent Sicily, burst upon his sight. How exquisite was the cool breeze as it swept across his cheek, loaded with fragrance! He inhaled it as though it were the breath of continued life. And there was a freshness in the landscape, and in the rippling of the calm green sea, that fell upon his withering heart like dew upon the parched earth. How he gazed, and panted, and still

clung to his hold! sometimes hanging by one hand, sometimes by the other, and then grasping the bars with both, as loth to quit the smiling paradise outstretched before him; till exhausted, and his hands swollen and benumbed, he dropped helpless down, and lay stunned for a considerable time by the fall.

When he recovered, the glorious vision had vanished. He was in darkness. He doubted whether it was not a dream that had passed before his sleeping fancy; but gradually his scattered thoughts returned, and with them came remembrance. Yes! he had looked once again upon the gorgeous splendor of nature! Once again his eyes had trembled beneath their veiled lids, at the sun's radiance, and sought repose in the soft verdure of the olive tree, or the gentle swell of undulating waves. Oh, that he were a mariner, exposed upon those waves to the worst fury of storm and tempest; or a very wretch loathsome with disease, plague-stricken, and his body one leprous contagion from crown to sole, hunted forth to gasp out the remnant of infectious life beneath those verdant trees, so he might shun the destiny upon whose edge he tottered!

Vain thoughts like these would steal over his mind from time to time, in spite of himself; but they scarcely moved it from that stupor into which it had sunk, and which kept him, during the whole night, like one who had been drugged with opium. He was equally insensible to the calls of hunger and of thirst, though the third day was now commencing since even a drop of water had passed his lips. He remained on the ground sometimes sitting, sometimes lying; at intervals, sleeping heavily; and when not sleeping, silently brooding over what was to come, or talking aloud, in disordered speech, of his wrongs, of his friends of his home, and of those he loved with a confused mingling of all.

In this pitiable condition, the sixth and last morning dawned upon Vivenzio, if dawn it might be called—the dim, obscure light which faintly struggled through the ONE SOLITARY window of his dungeon. He could hardly be said to notice the melancholy token. And yet he did notice it; for as he raised his eyes and saw the portentous sign, there was a slight convulsive distortion of his countenance. But what did attract his notice, and at the sight of which his agitation was excessive, was the change his iron bed

had undergone. It was a bed no longer. It stood before him, the visible semblance of a funeral couch or bier! When he beheld this he started from the ground; and, in raising himself suddenly struck his head against the roof, which was now so low that he could no longer stand upright. "God's will be done," was all he said as he crouched his body, and placed his hand upon the bier; for such it was. The iron bedstead had been so contrived, by the mechanical art of Ludovico Sforza, that as the advancing walls came in contact with its head and feet, a pressure was produced upon concealed springs, which, when made to play, set in motion a very simple though ingeniously-contrived machinery that effected the transformation. The object was, of course, to heighten, in the closing scene of this horrible drama, all the feelings of despair and anguish, which the preceding ones had aroused. For the same reason, the last window was so made as to admit only a shadowy kind of gloom rather than light, that the wretched captive might be surrounded as it were, with every seeming preparation for approaching death.

Vivenzio seated himself on his bier. Then he knelt and prayed fervently; and sometimes tears would gush from him. The air seemed thick, and he breathed with difficulty; or it might be that he fancied it was so, from the hot and narrow limits of his dungeon, which were now so diminished that he could neither stand up nor lie down at his full length. But his wasted spirits and oppressed mind no longer struggled within him. He was past hope, and fear shook him no more. Happy if thus revenge had struck its final blow; for he would have fallen beneath it almost unconscious of a pang. But such a

lethargy of the soul, after such an excitement of its fiercest passions, had entered into the diabolical calculations of Tolfi; and the fell artificer of his designs had imagined a counter-acting device.

The tolling of an enormous bell struck upon the ears of Vivenzio! He started. It beat but once. The sound was so close and stunning, that it seemed to shatter his very brain, while it echoed through the rocky passages like reverberating peals of thunder. This was followed by a sudden crash of the roof and walls, as if they were about to fall upon and close around him at once. Vivenzio screamed and instinctively spread forth his arms, as though he had a giant's strength to hold them back. They had moved nearer to him, and were now motionless. Vivenzio looked up and saw the roof almost touching his head, even as he sat covering beneath it; and he felt that a farther contraction of but a few inches only must commence the frightful operation. Roused as he had been, he now gasped for breath. His body shook violently—he was bent nearly double. His hands rested upon either wall, and his feet were drawn under him to avoid the pressure in front. Thus he remained for more than an hour, when that deafening bell beat again, and again there came the crash of horrid death. But the concussion was now so great that it struck Vivenzio down. As he lay gathered up in lessened bulk, the bell beat loud and frequent—crash succeeded crash—and on, and on, and on came the mysterious engine of death, till Vivenzio's smothered groans were heard no more! He was horribly crushed by the ponderous roof and collapsing sides—and the flattened bier was his *Iron Shroud*.

DR. LIVINGSTONE'S BOOK. — A paragraph from an American paper concerning Mr. Murray and Dr. Livingstone has been reproduced by one journal in this country. As there is an error therein, we (*Athenæum*) hasten to correct the paragraph before it goes the usual round. "Murray, the publisher," thus runs the passage, "undertook to give Livingstone £2,000 out of the proceeds of the first edition of 12,000 copies.

When the second edition was called for, the publisher wrote to the author that he should have a third of the profits." The facts, however, are that Mr. Murray did not calculate possible proceeds, but paid 2,000 guineas at once; and that, instead of promising one-third of the profits of future editions, he undertook to pay two-thirds.

From Fraser's Magazine.

CONCERNING WORK AND PLAY.

Nobody likes to work. I should never work at all if I could help it. I mean, when I say that nobody likes work, that nobody does so whose tastes and likings are in a natural and unsophisticated condition. Some men, by long training and by the force of various circumstances, do, I am aware, come to have an actual craving, a morbid appetite for work; but it is a morbid appetite, just as truly as that which impels a lady to eat chalk, or a child to prefer pickles to sugar-plums. Or if my reader quarrels with the word *morbid*, and insists that a liking for brisk, hard work is a healthy taste and not a diseased one, I will give up that phrase, and substitute for it the less strong one that a liking for work is an *acquired taste*, like that which leads you and me, my friend, to like bitter beer. Such a man, for instance, as Lord Campbell, has brought himself to that state that I have no doubt he actually enjoys the thought of the enormous quantity of work which he goes through; but when he does so he does a thing as completely out of nature as is done by the Indian fakir, who feels a gloomy satisfaction as he reflects on the success with which he has labored to weed out all but bitterness from life. I know quite well that we can bring ourselves to such a state of mind that we shall feel a sad sort of pleasure in thinking how much we are taking out of ourselves, and how much we are denying ourselves. What college man who ever worked himself to death but knows well the curious condition of mind? He begins to toil, induced by the love of knowledge, or by the desire of distinction; but after he has toiled on for some weeks or months, there gradually steals in such a feeling as that which I have been describing. I have felt it myself, and so know all about it. I do not believe that any student ever worked harder than I did. And I remember well the gloomy kind of satisfaction I used to feel, as all day and much of the night I bent over my books, in thinking how much I was foregoing. The sky never seemed so blue and so inviting as when I looked at it for a moment now and then, and so back to the weary page. And never did green woodland walks picture themselves to my mind so freshly and delightfully as when I thought of them as of something which I was resolutely denying myself. I re-

member even now, when I went to bed at half-past four in the morning, having risen at half-past six the previous morning, and having done nearly as much for months, how I was positively pleased to see in the glass the ghastly cheeks, and the deep black circles round the eyes. There is, I repeat, a certain pleasure in thinking one is working desperately hard, and taking a great deal out of oneself; but it is a pleasure which is unnatural, which is factitious, which is morbid. It is not in the healthy, unsophisticated human animal. We know, of course, that Lord Chief-Justice Ellenborough said, when he was about seventy, that the greatest pleasure that remained to him in life, was to hear a young barrister, named Follett, argue a point of law; but it was a highly artificial state of mind, the result of very long training, which enabled the eminent judge to enjoy the gratification which he described: and to ordinary men a legal argument, however ably conducted, would be sickeningly tiresome. If you want to know the natural feeling of humanity towards work, see what children think of it. Is not the task always a disagreeable necessity, even to the very best boy? How I used to hate mine! Of course, my friendly reader, if you knew who I am, I should talk of myself less freely; but as you do not know, and could not possibly guess, I may ostensibly do what every man tacitly does, make myself the standard of average human nature, the first meridian from which all distances and deflections are to be measured. Well, my feeling towards my school tasks was nothing short of hatred. And yet I was not a dunce. No, I was a clever boy. I was at the head of all my classes. I never competed at school or college for a prize which I did not get. And I hated work all the while. Therefore I believe that all unsophisticated mortals hate it. I have seen silly parents trying to get their children to say that they liked school-time better than holiday-time; that they liked work better than play. I have seen, with joy, manly little fellows repudiating the odious and unnatural sentiment; and declaring manfully that they preferred cricket to Ovid. And if any boy ever tells you that he would rather learn his lessons than go out to the play-ground, beware of that boy. Either his health is drooping, and his mind becoming prematurely and unnaturally developed, or he is a little humbug. He

is an impostor. He is seeking to obtain credit under false pretences. Depend upon it, unless it really be that he is a poor little spiritless man, deficient in nerve and muscle, and unhealthily precocious in intellect, he has in him the elements of a sneak; and he wants nothing but time to ripen him into a pick-pocket, a swindler, a horse-dealer, or a Whig statesman.

Every one, then, naturally hates work, and loves its opposite, play. And let it be remarked that not idleness, but play, is the opposite of work. But some people are so happy, as to be able to idealize their work into play: or they have so great a liking for their work that they do not feel their work as effort, and thus the element is eliminated which makes work a pain. How I envy those human beings who have such enjoyment in their work, that it ceases to be work at all! There is my friend Mr. Tinto the painter; he is never so happy as when he is busy at his canvas, drawing forth from it forms of beauty: he is up at his work almost as soon as he has daylight for it; he paints all day, and he is sorry when the twilight compels him to stop. He delights in his work, and so his work becomes play. I suppose the kind of work which, in the case of ordinary men, never ceases to be work, never loses the conscious feeling of strain and effort, is that of composition. A great poet, possibly, may find much pleasure in writing, and there have been exceptional men who said they never were so happy as when they had the pen in their hand: Buffon, I think, tells us that once he wrote for fourteen hours at a stretch, and all that time was in a state of positive enjoyment; and Lord Macaulay, in the preface to his recently published *Speeches*, assures us that the writing of his *History* is the occupation and the happiness of his life. Well, I am glad to hear it. Ordinary mortals cannot sympathize with the feeling. To *them* composition is simply hard work, and hard work is pain. Of course, even commonplace men have occasionally had their moments of inspiration, when thoughts present themselves vividly, and clothe themselves in felicitous expressions, without much, or any conscious effort. But these seasons are short and far between: and although while they last it becomes comparatively pleasant to write, it never becomes so pleasant as it would be to lay down the pen, to lean back in the easy

chair, to take up the *Times* or *Fraser*, and enjoy the luxury of being carried easily along that track of thought which cost its writer so much labor to pioneer through the trackless jungle of the world of mind. Ah, how easy it is to read what it was so difficult to write! There is all the difference between running down from London to Manchester by the railway after it has been made, and of making the railway from London to Manchester. You, my intelligent reader, who begin to read a chapter of Mr. Froude's eloquent *History*, and get on with it so fluently, are like the snug old gentleman, travelling-capped, railway-rugged, great-coated and plaided, who leans back in the corner of the softly-cushioned carriage as it flits over Chat-moss; while the writer of the chapter is like George Stephenson, toiling month after month to make the track along which you speed, in the face of difficulties and discouragements which you never think of.

And so I say it may sometimes be somewhat easy and pleasant to write, but never so easy and pleasant as it is not to write. The odd thing, too, about the work of the pen is this: that it is often done best by the men who like it least and shrink from it most, and that it is often the most laborious writing along which the reader's mind glides most easily and pleasantly. It is not so in other matters. As the general rule, no man does well the work which he dislikes. No man will be a good preacher who dislikes preaching. No man will be a good anatomist who hates dissecting. Sir Charles Napier, it must be confessed, was a great soldier though he hated fighting; and as for writing, some men have been the best writers who hated writing, and who would never have penned a line but under the pressure of necessity. There is John Foster; what a great writer he was; and yet his biography tells us, in his own words, too, scores of times, how he shrunk away from the intense mental effort of composition; how he abhorred it and dreaded it, though he did it so admirably well. There is Coleridge: how that great mind ran to waste, because Coleridge shrunk from the painful labor of formal composition; and so *Christabel* must have remained unfinished, save for the eloquent labors of that greatest, wisest, most original, and least commonplace of men, Dr. Martin Farquhar Tupper: and so, instead of volumes of hoarded

wisdom and wit, we have but the fading remembrances of hours of marvellous talk. I do not by any means intend to assert that there are not worse things than work, even than very hard work; but I say that work, as work, is a bad thing. It may once have been otherwise, but the curse is in it now. We do it because we must; it is our duty; we live by it; it is the Creator's intention that we should; it makes us enjoy leisure and recreation and rest; it stands between us and the pure misery of idleness; it is dignified and honorable; it is the soil and the atmosphere in which grow cheerfulness, hopefulness, health of body and mind. But still, if we could get all these good ends without it, we should be glad. We do not care for exertion for its own sake. Even Mr. Kingsley does not love the north-east wind for itself, but because of the good things that come with it and from it. Work is not an end in itself. "The end of work," said Aristotle, "is to enjoy leisure;" or, as *The Minstrel* hath it, "the end and the reward of toil is rest." I do not wish to draw from too sacred a source the confirmation of these summer day fancies; but I think, as I write, of the descriptions which we find in a certain volume of the happiness of another world. Has not many an over-wrought and wearied-out worker found comfort in an assurance of which I shall here speak no further, that "There remaineth a rest to the people of God?"

And so, my reader, if it be true that nobody, anywhere, would (in his sober senses) work if he could help it, how especially true is that great principle on this beautiful July day! It is truly a day on which to do nothing. I am here, far in the country, and when I this moment went to the window, and looked out upon a rich summer landscape, every thing seemed asleep. The sky is sapphire-blue, without a cloud; the sun is pouring down a flood of splendor upon all things; there is not a breath stirring, hardly the twitter of a bird. All the air is filled with the fragrance of the young clover. The landscape is richly wooded; I never saw the trees more thickly covered with leaves, and now they are perfectly still. I am writing north of the Tweed, and the horizon is of blue hills, which some southrons would call mountains. The wheat-fields are beginning to have a little of the harvest-tinge, and they contrast beautifully with the deep green of

the hedge-rows. The roses are almost over, but I can see plenty of honeysuckle in the hedges still, and a perfect blaze of it has covered one projecting branch of a young oak. I am looking at a little well-shaven green (I shall not call it a lawn, because it is not one), it has not been mown for nearly a fortnight, and it is perfectly white with daisies. Beyond, at a very short distance, through the branches of many oaks, I can see a gable of the church, and a few large gravestones shining white among the green grass and leaves. I do not find all these things any great temptation now, for I have got interested in my work, and I like to write of them. But I found it uncommonly hard to sit down this morning to my work. Indeed, I found it impossible, and thus it is that at five o'clock P. M., I have got no further than the present line. I had quite resolved that this morning I would sit doggedly down to my article, in which I have really (though the reader may find it hard to believe it) got something to say; but when I walked out after breakfast, I felt that all nature was saying that this was not a day for work. Come forth and look at me, seemed the message breathed from her beautiful face. And then I thought of Wordsworth's ballad, which sets out so pleasing an excuse for idleness:—

"Books! 'tis a dull and endless strife,
Come, hear the woodland linnet;
How sweet his music! on my life
There's more of wisdom in it.

"And hark! how bright the thrush sings!
He, too, is no mean preacher:
Come forth into the light of things,
Let Nature be your teacher.

"She has a world of ready wealth,
Our minds and hearts to bless,—
Spontaneous wisdom breathed by health,
Truth breathed by cheerfulness.

"One impulse from a vernal wood,
May teach you more of man,
Of moral evil and of good,
Than all the sages can!"

Just at my gate the man who keeps in order the roads of the parish was hard at work. How pleasant, I thought, to work amid the pure air and the sweet-smelling clover! And how pleasant, too, to have work to do of such a nature that when you go to it every morning you can make quite sure that, barring accident, you will accomplish a certain amount before the sun shall set; while as for the man whose work is that of the brain and the pen, he never can be certain in the morn-

ing how much his day's labor may amount to. He may sit down at his desk, spread out his paper, have his ink in the right place, and his favorite pen, and yet he may find that he cannot get on, that thoughts will not come, that his mind is utterly sterile, that he cannot see his way through his subject, or that if he can produce any thing at all it is poor miserable stuff whose poorness no one knows better than himself. And so, after hours of effort and discouragement, he may have to lay his work aside, having accomplished nothing, having made no progress at all—wearied, stupified, disheartened, thinking himself a mere blockhead. Thus musing, I approached the roadman. I inquired how his wife and children were. I asked how he liked the new cottage he had lately moved into. Well he said, but it was far from his work; he had walked eight miles and a half that morning to his work; he had to walk the same distance home again in the evening after laboring all day; and for this his wages were thirteen shillings a week, with a deduction for such days as he might be unable to work. He did not mention all this by way of complaint; he was comfortably off, he said; he should be thankful he was so much better off than many. He had got a little pony lately very cheap, which would carry himself and his tools to and from his employment, and that would be very nice. In all likelihood, my friendly reader, the roadman would not have been so communicative to you; but as for me, it is my duty and my happiness to be the sympathizing friend of every man, woman, and child in this parish, and it pleases me much to believe that there is no one throughout its little population who does not think of me and speak to me as a friend. I talked a little longer to the roadman about parish affairs. We mutually agreed in remarking the incongruous colors of a pair of ponies which passed in a little phaeton, of which one was cream-colored and the other dapple-grey. The phaeton came from a friend's house a little way off, and I wondered if it were going to the railway to bring some one who (I knew) was expected; for in such simple matters do we simple country folk find something to maintain the interest of life. I need not go on to describe what other things I did; how I looked with pleasure at a field of oats and another of potatoes in which I am concerned, and held several short

conversations with passers-by; but the result of the whole was a conviction that, after all, it was best to set to work at once, though well remembering how much by indoor work in the country on such a day as this one is missing. And the thought of the roadman's seventeen miles of walking, in addition to his day's work, was something of a reproof and a stimulus. And thus, determined at least to make a beginning, did I write this much *Concerning Work and Play*.

I find a great want in all that is written on the subject of recreation. People tell me that I need recreation, that I cannot do without it, that mind and body alike demand it. I know all that, but they do not tell me how to recreate myself. They fight shy of all practical details. Now it is just these I want. All working men must have play; but what sort of play can we have? I envy school-boys their facility of being amused, and of finding recreation which entirely changes the current of their thoughts. A boy flying his kite or whipping his top is pursued by no remembrance of the knotty line of Virgil which puzzled him a little while ago in school; but when the grown-up man takes his sober afternoon walk—perhaps the only relaxation which he has during the day—he is thinking still of the book which he is writing and of the cares which he has left at home. Then, and all the worse for myself, I can feel no interest in flying a kite, or rigging and sailing a little ship, or making a mill-wheel and setting it going, or in marbles, or ball, or running races, or playing at leap-frog. And even if they did feel interest in athletic sports, the lungs and sinews of most educated men of middle age would forbid their joining in them. I need not therefore suggest the doubt which would probably be cast upon a man's sanity were he found eagerly knuckling down (how stiff it would soon make him), or wildly chasing the flying football, or making a rush at a friend and taking a flying leap over his head. Now what recreation, I want to know, is open to the middle-aged man of literary tastes? Shooting, coursing, fishing, says one; but he does not care for shooting or coursing or fishing. Gardening, says another; but he does not care for gardening. Watching ferns, caterpillars, frogs, and other "common objects of the country;" well, but he lives in town, and if he did not he does not feel the least interest in ferns and cater-

pillars. Music is suggested; well, he has no great ear, and he may dwell where he can have little or none of it. Society! pray what is society? No doubt the conversation of intelligent men and women is a most grateful and stimulating recreation; but is there any recreation in dreary dinner-parties, where one listens to the twaddle of silly old gentlemen and emptier young ones, or in the hot-house atmosphere and crush of most evening parties? These are not play; they are very hard work, and a treadmill work producing no beneficial results, but rather provocative of all manner of ill-temper. Then, no doubt, there is most agreeable recreation for some people in the excitement of a polka or gallop and its attendant light and cheerful talk, not to say flirtation; but then our representative man has got beyond these things: these are for young people—he is married now and sobered down; he probably was never the man to make himself eminently agreeable in such a scene, and he is less so now than ever. Besides, if play be something from which you are to return with renewed strength and interest to work, I doubt whether the ball-room is the place where it is to be found. Late hours, a feverish atmosphere, and excessive exercise, tend to morning slumbers, headaches, crossness, and laziness. To find dancing which answers the end of recreation, we must go to less fashionable places. I like the pictures which Goldsmith gives us of the sunny summer evenings of France, where the whole population of the village danced to his flute in the shade; and even the soured Childe Harold melted somewhat into sympathy with the Spanish peasants as they twirled their castanets in the twilight. Southey's picture is a pretty one, but its description sounds somewhat unreal:

"But peace was on the Cottage, and the fold
From Court intrigue, from bickering faction
far:

Beneath the chestnut tree love's tale was told,
And to the tinkling of the light guitar,
Sweet stooped the western sun, sweet rose
the evening star!"

Nor let it be fancied that such a scene cannot be represented except in countries to which distance and strangeness give their interest. This very season, on a beautiful summer evening, I saw a happy party of eighty country folk dancing upon a greener little bit of turf than Goldsmith ever saw in France. And I wished such things were more com-

mon; though the grave Saxon spirit, equal to the enjoyment of such gaiety now and then, might perhaps flag under it did it come too often. But on the occasion to which I refer, there was no lack of innocent cheerfulness; the enjoyment seemed real; and though there were no castanets and no guitars, but a fiddle for music and reels for dances, there were as pretty faces and as graceful figures among the girls, I warrant, as you would find from the Rhine to the Pyrenees.

But, to resume the somewhat ravelled thread of our discussion,—if a man has come to this, that he can feel no interest in such recreations as those which we have mentioned, what is he to do? And let it be remembered that I am putting no fanciful case: be sorry, if you will, for the man who from taste and habit cannot be easily amused; but remember that such is the lot of a very large proportion of the intellectual laborers of the race. And what is such a man to do? After using his eyes and exerting his brain all the forenoon in reading and writing by way of work, must he just use his eyes and exert his brain all the evening in reading and writing by way of play? Has it come to this that he must find the only recreation that remains for him in the *Times*, the *Quarterly Review*, and *Fraser's Magazine*? All these things are indeed excellent in their way. They relax and interest the mind: but then they wear out the eyes, they contract the chest, they render the muscles flabby, they ruin the ganglionic apparatus, they make the mind but unmake the body. Now, that will not do. Does nothing remain, in the way of play, but the afternoon walk or drive: the vacant period between dinner and tea, when no one works, notwithstanding Johnson's warning, that he who resolves that he cannot work between dinner and tea, will probably proceed to the conclusion that he cannot work between breakfast and dinner; a little quiet gossip with your wife, a little romping with your children, if you have a wife and children; and then back again to the weary books? Think of the elder Disraeli, who looked at printed pages so long, that by and by, wherever he looked, he saw nothing but printed pages, and then became blind. Think what poor specimens of the human animal, physically, many of our noblest and ablest men are. Do not men, by their beautiful, touching, and far-reaching thoughts, reach

the heart and form the mind of thousands, who could not run a hundred yards without panting for breath, who could not jump over a five-foot wall though a mad bull were after them, who could not dig in the garden for ten minutes without having their brain throbbing and their entire frame trembling, who could not carry in a sack of coals though they should never see a fire again, who could never find a day's employment as porters, laborers, grooms, or any thing but tailors? Educated and cultivated men, I tell you that you make a terrible mistake; and a mistake which, before the end of the twentieth century, will sadly deteriorate the Anglo-Saxon race. You make your recreation purely mental. You give a little play to your minds, after their day's work; but you give no play to your eyes, to your brains, to your hearts, to your digestion,—in short, to your bodies. And therefore you grow weak, unmuscular, nervous, dyspeptic, near-sighted, out-of-breath, neuralgic, pressure-on-the-brain, thin-haired men. And in time, not only does all the train of evils that follows your not providing proper recreation for your physical nature, come miserably to affect your spirits; but, besides that, it comes to jaundice and pervert and distort all your views of men and things. I have heard of those who, though suffering almost ceaseless pain, could yet think hopefully of the prospects of humanity, and take an unprejudiced view of some political question that appealed strongly to prejudice, and give kindly sympathy and sound advice to a poor man who came to seek advice in some little trouble which is great to him. But I fear that in the majority of instances, the human being whose liver is in a bad way, whose digestion is ruined, or even who is suffering from violent toothache, is prone to snub the servants, to box the children's ears, to think that Britain is going to destruction, and that the world is coming to an end.

It may be said, that the class of intellectual workers have their yearly holiday. When this article sees the light, it will be the middle of the "Long Vacation." And it is well, indeed, that most men whose work is brain-work have that blessed period of relief, wherein, amid the Swiss snows, or the Highland heather, or out upon the Mediterranean waves, they seek to re-invigorate the jaded body and mind, and to lay in a store of health and strength with which to face the winter

work again. But this is not enough. A man might just as well say that he would eat in August or September all the food which is to support him through the year, as think in that time to take the whole year's recreation, the whole year's play, in one *bonne bouche*. Recreation must be a daily thing. Every day must have its play, as well as its work. There is much sound, practical sense in Sir Thomas More's *Utopia*; and nowhere sounder than where he tells us that in his model country he would have "half the day allotted for work, and half for honest recreation." Every day, bringing, as it does, work to every man who is worth his salt in this world, ought likewise to bring its play: play which will turn the thoughts into quite new and cheerful channels; which will recreate the body as well as the mind; and tell me, great Father of Waters, to whom Rasselas appealed upon a question of equal difficulty,—or tell me, anybody else, what that play shall be! Practically, in the case of most educated men, of most intellectual workers, heavy reading and writing stand for work, and light reading and writing stand for play.

I can well imagine what a delightful thing it must be for a toil-worn barrister to throw briefs, and cases, and reports aside, and quitting the pestilential air of Westminster Hall, laden with odors from the Thames which are not the least like those of Araby the Blest, to set off to the Highlands for a few weeks among the moors. No schoolboy at holiday-time is lighter-hearted than he, as he settles down into his corner in that fearfully fast express train on the Great Northern Railway. And when he reaches his box in the North at last, what a fresh and happy sensation it must be to get up in the morning in that pure, unbreathed air, with the feeling that he has nothing to do,—nothing, at any rate, except what he chooses; and after the deliberately-eaten breakfast, to saunter forth with the delightful sense of leisure,—to think that he has time to breathe and think after the ceaseless hurry of the past months,—and to think that nothing will go wrong although he should sit down on the mossy parapet of the little one-arched bridge that spans the brawling mountain-stream, and there rest, and muse, and dream just as long as he likes. Two or three such men come to this neighborhood yearly; and I enjoy the sight of them, they look so happy. Every little thing, if they indeed be

genial, true, unstiffened men, is a source of interest to them. The total change makes them grow rapturous about matters which we, who are quite accustomed to them, take more coolly. I think, when I look at them, of the truthful lines of Gray:

"See the wretch, that long has tost,
On the thorny bed of pain,
At length repair his vigor lost,
And breathe and walk again:
The meanest flowret of the vale,
The simplest note that swells the gale,
The common sun, the air, the skies,
To him are opening paradise."

Equidem invidio, a little. I feel somewhat vexed when I think how much more beautiful these pleasant scenes around me really are, than what, by any effort, I can make them seem to me. You hard-wrought town folk, when you came to rural regions, have the advantage of us leisurely country people.

But, much as that great Queen's Counsel enjoys his long vacation's play, you see it is not enough. Look how thin his hair is, how pale his cheeks are, how fleshless those long fingers, how unmuscular those arms. What he needs, in addition to the autumn holiday, is some *bond fide* play every day of his life. What is his amusement when in town? Why, mainly it consists of going into society, where he gains nothing of elasticity and vigor, but merely injures his digestive organs. Why does he not rather have half an hour's lively bodily exercise,—rowing, or quoits, or tennis, or skating, or any thing he may have taste for? And if it be foolish to take all the year's play at once, as so many intellectual workers think to do, much more foolish is it to keep all the play of life till the work is over: to toil and moil at business through all the better years of our time in this world, in the hope that at length we shall be able to retire from business, and make the evening of life all holiday, all play. In all likelihood the man who takes this course will never retire at all, except into an untimely grave; and if he should live to reach the long-coveted retreat, he will find that all play and no work makes life quite as wearisome and as little enjoyable as all work and no play. *Ennui* will make him miserable; and body and mind, deprived of their wonted occupation, will soon break down. After very hard and long-continued work, there is indeed a pleasure in merely sitting still and doing nothing. But

after the feeling of pure exhaustion is gone, that will not suffice. A boy enjoys play, but he is miserable in enforced idleness. In writing about retiring from the task-work of life, one naturally thinks of that letter to Wordsworth, in which Charles Lamb told what he felt when he was finally emancipated from his drudgery in the India House:

"I came home FOR EVER on Tuesday week. The incomprehensibleness of my condition overwhelmed me. It was like passing from life into eternity. Every year to be as long as three; that is, to have three times as much real time—time that is my own—in it! I wandered about thinking I was happy, and feeling I was not. But that tumultuousness is passing off, and I begin to understand the nature of the gift. Holidays, even the annual month, were always uneasy joys, with their conscious fugitiveness, the craving after making the most of them. Now, when all is holiday, there are no holidays. I can sit at home, in rain or shine, without a restless impulse for walkings."

There are unhappy beings in the world, who secretly stand in fear of all play, on the hateful and wicked notion, which I believe some men regard as being of the essence of Christianity, though in truth it is its contradiction, that every thing pleasant is sinful,—that God dislikes to see his creatures cheerful and happy. I think it is the author of *Friends in Council* who says something to the effect, that many people, infected with that Puritan falsehood, shrink about creation, afraid to confess that they ever are enjoying themselves.

But there is another class of mortals, who are free from the Puritan principle, and who have no objection to amusement for themselves, but who seem to have no notion that their inferiors and their servants ought ever to do anything but work. The reader will remember the fashionable governess in *The Old Curiosity Shop*, who insisted that only genteel children should ever be permitted to play. The well-known lines of Dr. Isaac Watts,—

"In books, or work, or healthful play,
Let my first years be past,—"

were applicable, she maintained, only to the children of families of the wealthier sort while for poor children there must be a new reading, which she improvised as follows:—

"In work, work, work. In work alway,
Let my first years be past:
That I may give, for every day,
Some good account at last."

And as for domestic servants, poor creatures, I fear there is many a house in which there is no provision whatever made for play for them. There can be no drearier round of life than that to which their employers destine them. From the moment they rise, hours before any member of the family to the moment when they return to bed, it is one constant push of sordid labor,—often in chambers to which air and light and cheerfulness can never come. And if they ask a rare holiday, what a fuss is made about it! Now, what is the result of all this? Some poor solitary beings do actually sink into the spiritless drudges which such a life tends to make them: but the greater number feel that they cannot live with all work and no play: and as they cannot get play openly, they get it secretly: they go out at night when you, their mistress, are asleep; or they bring in their friends at those unreasonable hours: they get that amusement and recreation on the sly, and with the sense that they are doing wrong and deceiving, which they ought to be permitted to have openly and honestly; and thus you break down their moral principle, you train them to cheat you, you educate them into liars and thieves. Of course your servants thus regard you as their natural enemy: it is fair to take any advantage you can of a gaoler: you are their task-imposer, their driver, their gaoler,—anything but their friend; and if they can take advantage of you in any way, they will. And serve you right.

I have known injudicious clergymen who did all they could to discourage the games and sports of their parishioners. They could not prevent them; but one thing they did,—they made them disreputable. They made sure that the poor man who ran in a sack, or climbed a greased pole, felt that thereby he was forfeiting his character, perhaps imperiling his salvation: and so he thought that having gone so far, he might go the full length: and thus he got drunk, got into a fight, thrashed his wife, smashed his crockery, and went to the lock-up. How much better it would have been had the clergyman sought to regulate these amusements; and since they would go on, try to make sure that they should go creditably and decently. Thus, poor folk might have been cheerful without having their conscience stinging them all the time: and let it be remembered, that if you pervert a man's moral sense (which you may

quite readily do with the uneducated classes) into fancying that it is wicked to use the right hand or the right foot, while the man still goes on using the right hand and the right foot, you do him an irreparable mischief: you bring on a temper of moral recklessness: and help him a considerable step towards the gallows. Since people must have amusement, and will have amusement; for any sake do not get them to think that amusement is wicked. You cannot keep them from finding recreation of some sort: you may drive them to find it at a lower level, and to partake of it soured by remorse, and by the wretched resolution that they will have it right or wrong. Instead of anathematizing all play, sympathize with it genially and heartily; and say, with kind-hearted old Burton—

“Let the world have their may-games, wakes, whitsunals; their dancings and their concerts; their puppet-shows, hobby-horses, taborers, bag-pipes, balls, barley-breaks, and whatever sports and recreations pleases them best, provided they be followed with discretion.”

Let it be here remarked, that recreation can be fully enjoyed only by the man who has some earnest occupation. The end of work is to enjoy leisure; but to enjoy leisure you must have gone through work. Playtime must come after schooltime, otherwise it loses its savour. Play, after all, is a relative thing: it is not a thing which has an absolute existence. There is no such thing as play, except to the worker. It comes out by contrast. Put white upon white, and you can hardly see it: put white upon black and how plain it is. Light your lamp in the sunshine, and it is nothing: you must have darkness round it to make its presence felt. And besides this, a great part of the enjoyment of recreation consists in the feeling that we have earned it by previous hard work. One goes out for the afternoon walk with a light heart when one has done a good task since breakfast. It is one thing for a dawdling idler to set off to the Continent or to the Highlands, just because he is sick of everything around him; and quite another thing when a hard-wrought man, who is of some use in life, sets off, as gay as a lark, with the pleasant feeling that he has brought some worthy work to an end, on the self-same tour. And then a busy man finds a relish in simple recreations; while a man who has nothing to do, finds all things wearisome, and thinks that life is “used up;” it

takes something quite out of the way to tickle that indurated palate: you might as well think to prick the hide of a hippopotamus with a needle, as to excite the interest of that *blasé* being by any amusement which is not highly spiced with the cayenne of vice. And *that*, certainly, has a powerful effect. It was a glass of water the wicked old Frenchwoman was drinking when she said, "Oh, that this were a sin, to give it a relish!"

So it is worth while to work, if it were only that we might enjoy play. Thus doth Mr. Heliogabalus my next neighbor, who is a lazy man and an immense glutton, walk four miles every afternoon of his life. It is not that he hates exertion less, but that he loves dinner more; and the latter cannot be enjoyed unless the former is endured. And the man whose disposition is the idlest may be led to labor when he finds that labor is his only chance of finding any enjoyment in life. James Montgomery sums up much truth in a couple of lines in his *Pelican Island*, which run thus:—

"Labor, the symbol of man's punishment;
Labor, the secret of man's happiness."

Why on earth do people think it fine to be idle and useless? Fancy a drone superciliously desiring a working bee to stand aside, and saying, "Out of the way, you miserable drudge; I never made a drop of honey in all my life!" I have observed, too, that some silly people are ashamed that it should be known that they are so useful as they really are, and take pains to represent themselves as as more helpless, ignorant, and incapable than the fact. I have heard a weak old lady boast that her grown-up daughters were quite unable to fold up their own dresses; and that as for ordering dinner they had not a notion of such a thing. This and many similar particulars were stated with no small exultation, and that by a person far from rich and equally far from aristocratic. "What a silly old woman you are, was my silent reflection: "and if your daughters really are what you represent them, woe betide the poor man who shall marry one of the incapable young noodles." Give me the man, I say, who can turn his hand to all things, and who is not ashamed to confess that he can do so: who can preach a sermon, nail up a paling, prune a fruit tree, make a water-wheel or a kite for his little boy, write an article for *Fraser* or a leader for the *Times* or the *Spectator*. What a fine, genial, many-sided life did Sydney Smith lead at his York-

shire parish! I should have liked, I own, to have found in it more traces of the clergyman; but perhaps the biographer thought it better not to parade these. And in the regard of facing all difficulties with a cheerful heart, and nobly resolving to be useful and helpful in little matters as well as big, I think that life was as good a sermon as ever was preached from pulpit.

I have already said, in the course of this rambling discussion, that recreation must be such as shall turn the thoughts into a new channel, otherwise it is no recreation at all. And walking, which is the most usual physical exercise, here completely fails. Walking has grown by long habit a purely automatic act, demanding no attention: we think all the time we are walking; Southey even read while he took his daily walk. But Southey's story is a fearful warning. It will do a clergyman no good whatever to leave his desk and to go forth for his *constitutional*, if he is still thinking of his sermon, and trying to see his way through the treatment of his text. You see in Gray's famous poem how little use is the mere walk to the contemplative man, how thoroughly it falls short of the end of play. You see how the hectic lad who is supposed to have written the *Elegy* employed himself when he wandered abroad:

"There at the foot of yonder nodding beech,
That wreathes its old fantastic roots so high,
His listless length at noontide would he stretch,
And pore upon the brook that babbles by."

"Hard by yon wood, now smiling as in scorn,
Muttering his wayward fancies he would rove;
Now drooping, woful, wan, like one forlorn,
Or crazed with care, or crossed in hopeless love."

That was the fashion in which the poor fellow took his daily recreation and exercise! His mother no doubt packed him out to take a bracing walk; she ought to have set him to saw wood for the fire, or to dig in the garden, or to clean the door-handles if he had muscle for nothing more. These things would have distracted his thoughts from their grand flights, and prevented his mooning about in that listless manner. Of course while walking he was bothering away about the poetical trash he had in his desk at home; and as he knocked up his ganglionic functions, he encouraged tubercles on his lungs, and came to furnish matter for the "hoary-headed swain's" narrative, the silly fellow!

Riding is better than walking, especially if you have rather a skittish steed, who compels you to attend to him on pain of being landed in the ditch, or sent, meteor-like, over the hedge. The elder Disraeli has preserved the memory of the diversions in which various hard thinkers found relaxation. Petavius, who wrote a deeply learned book, which I never saw, and which no one I ever saw ever heard of, twirled round his chair for five minutes every two hours that he was at work. Samuel Clark used to leap over the table and chairs. It was a rule which Ignatius Loyola imposed on his followers, that after two hours of work, the mind should always be unbent by some recreation. Every one has heard of Paley's remarkable feats of rapid horsemanship. Hundreds of times did that great man fall off. The Sultan Mahomet, who conquered Greece, unbent his mind by carving wooden spoons. In all these things you see, kindly reader, that true recreation was aimed at: that is, entire change of thought and occupation. Izaak Walton, again, who sets forth so pleasantly the praise of angling as "the Contemplative Man's Recreation," wrongly thinks to recommend the gentle craft by telling us that the angler may think all the while he plies it. I do not care for angling; I never caught a minnow; but still I joy in good old Izaak's pleasant pages, like thousands who do not care a pin for fishing, but who feel it like a cool retreat into green fields and trees to turn to his genial feeling and hearty pictures of quiet English scenery. He, however, had a vast opinion of the joys of angling in a pleasant country: only let him go quietly a-fishing:—

"And if contentment be a stranger then,
I'll ne'er look for it, but in heaven, again."

And he repeats with much approval the sentiments of "Jo. Davors, Esq.," in whose lines we may see much more of scenery than of the actual fishing:—

"Let me live harmlessly; and near the brink
Of Trent or Avon have a dwelling place,
Where I may see my quill or cork down sink,
With eager bite of perch, or bleak, or dace:
And on the world and my Creator think:
While some men strive ill-gotten goods to
embrace;
And others spend their time in base excess
Of wine, or worse, in war and wantonness.

"Let them that list, these pastimes still pursue,
And on such pleasing fancies feed their fill;
So I the fields and meadows green may view,
And daily by fresh rivers walk at will,

Among the daisies and the violets blue,
Red hyacinth and yellow daffodil;
Purple narcissus like the morning's rays,
Pale gander-grass, and azure culver-keys.

"All these, and many more of His creation,
That made the heavens, the angler oft doth
see;

Taking therein no little delectation,
To think how strange, how wonderful they
be!

Framing thereof an inward contemplation,
To set his heart from other fancies free:
And while he looks on these with joyful eye,
His mind is rapt above the starry sky."

Who shall say that the *terzarima* stanza was not written in English fluently and gracefully, before the days of Whistlecraft and *Don Juan*?

If thou desirest, reader, to find a catalogue of sports from which thou mayest select that which likes thee best, turn up Burton's *Anatomy of Melancholy*; or Joseph Strutt's *Sports and Pastimes of the People of England*. There mayest thou read of *Rural Exercises practised by Persons of Rank*, of *Rural Exercises Generally Practised*: (note how ingeniously Strutt puts the case: he does not say practised by Snobs, or the Lower Orders, or the Mobocracy). Next are *Pastimes Exercised in Towns and Cities*; and finally, *Domestic Amusements, and Pastimes Appropriated to Particular Seasons*. Were it not that my paper is verging to its close, I could surprise thee with a vast display of curious erudition; but I must content myself with having laid down the conditions which all true play must fulfil; and let every man choose the kind of play which hits his peculiar taste. There never has been in England any lack of sports in nominal existence: I heartily wish they were all (except the cruel ones of baiting and torturing animals) still kept up. The following lines are from a little book published in the reign of James I.:—

"Man, I dare challenge thee to Throw the
Sledge,
To Jump or Leape over ditch or hedge:
To Wrestle, play at Stoolball, or to Runne,
To Pitch the Barre, or shoote off a Gunne:
To play at Loggets, Nine Holes, or Ten
Pinnes,
To try it out at Football by the shinaes:
At Ticktack, Irish Noddie, Maw, and Ruffe,
At Hot Cockles, Leapfrog, or Blindmanbuffe:
To drink half-pots, or deale at the whole
canne,
To play at Base, or Pen and Ynhorne Sir
Jan:
To daunce the Morris, play at Barley-breake,
At all exploytes a man can think or speak:

At Shove-Groats, Venterpoynt, or Crosse and Pile,

At Beshrow him that's last at yonder Style :
At leaping o'er a Midsommer-bon-fier,
Or at the Drawing Dun out of the Myer."

In most agricultural districts it is wonderful how little play there is in the life of the laboring class. Well may the agricultural laborer be called a "working-man," for truly he does little else than work. His eating and sleeping are cut down to the *minimum* that shall suffice to keep him in trim for working. And the consequence is, that when he does get a holiday, he does not know what to make of himself; and in too many cases he spends it in getting drunk. I know places where the working men have no idea of any play, of any recreation, except getting drunk. And if their over-wrought wives, who must nurse five or six children, prepare the meals, tidy the house,—in fact, do the work which occupies three or four servants in the house of the poorest gentleman,—if the poor over-wrought creatures can contrive to find a blink of leisure through their waking hours, they know how to make no nobler use of it than to gossip, rather ill-naturedly, about their neighbors' affairs, and especially to discuss the domestic arrangements of the squire and the parson. Working men and women too frequently have forgotten how to play. It is so long since they did it, and they have so little heart for it. And God knows that the pressure of constant care, and the wolf kept barely at arm's length from the door, do leave little heart for it. O wealthy proprietors of land, you who have so much in your power, try to infuse something of joy and cheerfulness into the lot

of your humble neighbors! Read and ponder the essay and the conversation on *Recreation*, which you will find in the first volume of *Friends in Council*. And read again, I trust for the hundredth time, the poem from which I quote the lines which follow. Let me say here, that I verily believe some of my readers will not know the source whence I draw these lines. More is the shame: but longer experience of life is giving me a deep conviction of the astonishing ignorance of my fellow-creatures. I shall not tell them. They shall have the mortification of asking their friends the question. Only let it be added, that the poem where the passage stands, contains others more sweet and touching by far,—so sweet and touching that in all the range of English poetry they have never been surpassed.

"How often have I blessed the coming day,
When toil remitting, lent its turn to play;
And all the village train, from labor free,
Led up their sports beneath the spreading tree,
While many a pastime circled in the shade,
The young contending as the old surveyed;
And many a gambol frolick'd o'er the ground,
And sleights of art and feats of strength went round.

And still, as each repeated pleasure tired,
Succeeding sports the mirthful band inspired;
The dancing pair that simply sought renown,
By holding out to tire each other down,—
The swain mistrustless of his smuttied face,
While secret laughter titter'd round the place,—

The bashful virgin's sidelong looks of love,
The matron's glance that would those looks reprove,

These were thy charms, sweet village, sports like these,

With sweet succession, taught even toil to please."

THE BIBLE IN ITALY.—A letter from Rome says:—"A certain Count Gaddi-Ercolani was some time back arrested in this city, as already stated, and imprisoned. Long comments were made on the subject; but it now appears that it is a religious affair, the Count having been guilty of lending to some persons the Protestant translation of the Scriptures, known in Italy by the name of the Diodati Bible. A certain Abbé Masi is said to have been arrested at San Stefano, a pretty village in the mountains of the Sabina, for having lent or sold some copies of this same Bible."

BABYHOOD.—We are profoundly convinced

that the first year of a child's life is the most tremendously important of any succeeding twelvemonth, though the creature shall number threescore and ten. Consider the blank sheet of paper with which the head of every baby, according to the philosopher, is lined. Think of it, and shudder when you see nurses and nurse-maids writing their pothooks and hangers upon it, as though they wrote with rolling-pins, or, a. the best, wooden skewers! Poor human papyrus! How many after-scratchings and cuttle-fish-rubbings it shall take to scratch and rub out the marks—that, after all, may never wholly be effaced, but remain dingy and dark under snow-white hairs!—*Jerrold*.

From Household Words.

THUNDER AND LIGHTNING.

THERE are two kinds of electricity; the one vitreous or positive, the other resinous or negative; and both kinds are produced in the atmosphere by various causes; chiefly by evaporation. We may form a slight idea of the extent of evaporation carried on over the whole globe—over all the rivers and lakes and seas, the stagnant pools and latent moisture, the hidden springs and boundless oceans—when we remember that three hundred millions of hogsheads of water rise daily into vapor over the Mediterranean alone. By condensation, or the change which that evaporated vapor undergoes when returning to a fluid state through decrease of temperature; by vegetation, by combustion, and by friction. This last arises when masses of air, moving in contrary directions, encounter each other. The friction of their surfaces develops electricity, which is especially active when these masses differ in degrees of moisture and temperature; the cold developing negative, and the warm positive, electricity. The friction of the wind as it passes over trees, houses, mountains, and other high objects, is also held to set free the electricity of the atmosphere; so that we can understand why thunderstorms should be almost always accompanied by strong winds, and should rarely or never occur in perfectly still weather.

Clouds charged with electricity of one kind meet and coalesce in good fellowship enough; but, when those which bear a different kind meet together, a violent shock is the consequence. Rains are formed by the meeting of different winds, as thunder-storms by the contact of opposing electricities. A warm soft air, charged with moisture, meets with a cold wind direct from the polar regions. The cold north wind condenses and globulates the vapor, which falls to earth in the form of Scotch mists or showers.

First, before a storm arises, is seen the cirrus; that light, fibrous curl-like cloud which stretches in undulating waves or long lines over the sky, sometimes curling out like the lightest and most graceful feathers, or like the sweeping grain of knotted woods. This broadens out into the cirro-cumulus, or sonder cloud; those little round masses which lie near together: but yet separate, and give the mottled or speckled skies which are so beautiful in summer afternoons when they

bode no mischief and contain no evil. Then the cirro-cumulus gathers itself into the cumulus proper, or strachen-cloud—large heaped-up masses that look like carved marble or sun-covered boulders in the deep blue sky—those dazzling white day clouds which children gaze at wonderingly as if they were solid masses built up in the heavens, and which even older brains can scarcely credit to be mere imponderable vapor. These are the forerunners of the storm-cloud; that dark, grey, rugged mass, with its sharp and jagged edges, from which stream down both health and destruction to the world below; that cloud, darker and more threatening than the nimbus or rain-cloud, with which people, who are not good observers, so often confound it.

Storms never come from the perfectly uniform and regular clouds which sometimes cover all the sky. Storm clouds have always torn and angry edges, as one would expect from them, fierce and riving as they are—instruments of death, and among Natures earliest embodiments of rage and devastation. Storms are many patterned. Franklin says that a thunder-storm never comes from one cloud only, and Saussure agrees with him; but other meteorologists (notably, Bergman and Duchamel de Monceau, good names enough) assert the contrary; and Marcovelle states, that on the twelfth of September, seventeen hundred and forty-seven, the sky at Toulouse was perfectly clear, except for one little cloud, from which suddenly burst a thunderbolt that killed a woman named Bordenave as she stood before the house. If that unhappy femme Bordenave bore but an indifferent character—if sorcery and the black art were included among her gifts—we may be sure how the occasion was improved by all the anti-witchcraft world; and how an inevitable natural law was translated into a signal act of Divine vengeance, calculated to strike terror into the hearts of all the sabbet-haunters, loup-garous, broomstick-riders, black cat keepers, and familiar nourishers in Toulouse.

As storms always commence with the accumulation of the cirrus-cloud, and as the cirrus-cloud floats very high, it follows that storms are generally very high above the earth.—Kaemtz, one of the greatest meteorologists, doubts all the travellers' tales which set forth how they, the travellers, journeying over the Alps and the Brocken have seen storms forming below them. Yet Monsieur Abbadié

found in Ethiopia that an October storm was only about two hundred and thirty-three yards above the earth; but the highest which he noted was one in February, at about two thousand two hundred and forty yards, or about a mile and a quarter. As sound travels three hundred and seventy-five yards per second, the distance of time elapsing between the flash and the report may be taken as a basis for calculation by any one with nerve sufficient to time a thunder storm by the minute hand of his watch.

Pliny says it never thunders in Egypt. Plutarch that it never thunders in Abyssinia. We know now that both of these assertions are mistakes, though indeed Egypt is singularly exempt from frequency of storm; for storms are correspondent with rains, and as it seldom rains in Egypt, thunders and lightnings are equally rare. It never rains in Lower Peru, or so rarely as to be outside all meteorological consideration; consequently, say at Lima, storms of thunder and lightning are as little known as hurricanes of wind and rain. Storms are also rare at the North Pole, and never occur in mid-seas, at a certain distance from land. The rainy days at Cairo are only three or four in the year, the storm days are about the same number. At Calcutta the average of storm days is sixty, and everywhere a broad parallel is kept; so that where there is most rain there is also most thunder and lightning. Storms come at the same times and seasons, and with striking regularity. In the tropics they accompany the wet seasons and the change of the monsoons: at Calcutta, with its sixty days of storm, not one occurs in November, December, or January: at Martinique and Guadeloupe none are known in December, January, February, or March. In mean latitudes very few storms occur in winter and only a few in the hottest days of spring and autumn: more than one half come in summer and generally in the day—rarely at night either in the tropics or in the temperate zones. But the rule of summer storms does not hold absolutely for all places; for on the western coast of America and the eastern shores of the Adriatic more occur in winter than in summer; in Greece more in autumn and spring; in Rome there is no difference between summer and autumn; at Bergen and at the Azores where there are winter rains they are most frequent in the cold and rainy weather; at Kingston in Ja-

maica, it thunders every day for five consecutive months though the adjacent islands are tranquil; also at Popayan in Columbia, during a certain season, there is thunder every day.

Woods, mountains, and broken land, cause and attract storms; but their frequency is not always referable to the configuration of a district. At Paris, for instance, the average number of thunder-days is fourteen; and Paris is not on a dead level; while at Denainvilliers, between Orleans and Pithiviers, one of the flattest districts possible, the average is raised to twenty one. Other atmospheric causes, then, must be in operation which are not yet made fully manifest, and which remain to be investigated.

There are three kinds of lightning, says Monsieur Arago: forked, sheet, and spherical. Forked lightning comes in very slender flashes, generally white, but is sometimes blue or violet colored. Fine as these flashes are, they often divide into three or more branches: as, when in seventeen hundred and eighteen, twenty-four churches were struck in the environs of Saint Pol de Léon, but only three peals of thunder were heard. The flashes of forked lightning are most destructive. They are nowhere seen to more terrible perfection than when lighting up the dark ravines and black precipices of a mountainous district. Even in England, among the Cumberland mountains, the thunder-storms have a majesty and awful sublimity which no dweller on the plains can understand. Sheet lightning is comparatively harmless. Some of those thunderless summer lightnings are distant sheet lightnings, too distant to allow of the thunder, which yet exists, being heard. Dark red, blue, or violet are the principal colors of this form of electricity, which has neither the whiteness nor the swiftness of the forked. Spherical lightnings are what are called vulgarly, thunderbolts; luminous masses, or fiery globes, which descend slowly to the earth, and make lightning conductors useless. On the night of the fourteenth of April, seventeen hundred and eighteen, Deslandes saw three globes of fire fall on the church of Couesnon near Brest, and destroy it utterly; and, on the third of July, seventeen hundred and twenty-five, during the height of a thunder-tempest, an enormous globe of fire fell, and killed a shepherd and five sheep. This was not so terrible, though, as the Ethiopian

storm, reported by Abbaddie, which destroyed two thousand goats and the goatherd by one single flash. We quote these assertions modestly, if somewhat doubtfully; not presuming to place a limit to the wonderful forces of nature, of which the more we learn the less we seem to know, yet expressing ourselves humbly on the uncertainty of testimony, and the proneness to exaggeration common to humanity. The balance between scepticism and credulity is the most difficult of all balances to hold evenly.

Those summer lightnings, of which we have spoken have been taken by some to mean essentially harmless interchanges of electricity; the atmosphere seeking its own electrical equilibrium. But it will generally (not always) be found that, during their appearance, there has been a storm somewhere on earth, where, what was but lambent summer lightning to the far-off spectator, has proved to be deadly destructive fire to some hapless dweller underneath. In a July night of seventeen hundred and eighty-three, De Saussure, at the Hôpital de Grimsel, under a calm, clear sky, saw in the direction of Geneva, a thick band of clouds, which gave out thunderless lightnings. This was but summer lightning to him; but the Genevese were suffering all the horrors and ravages of a storm such as the oldest inhabitant had never witnessed. And in eighteen hundred and thirteen, Howard, at Tottenham, saw, on the south-east horizon, and under a clear starry sky, some pale summer lightnings, which proved afterwards to be a violent storm raging between Calais and Dunkerque. The question of distant storms, and how far the reflection of them could be possibly visible, and whether this sheet or summer lightning necessarily always argued a distant storm, was being once discussed at the philosophical society of Geneva. When the meeting broke up, the southern horizon was illuminated with the very form of lightning under dispute. Some days after, the newspapers spoke of a violent storm in the Pays de Vaud, Wurtemberg, and Bavaria; which seemed conclusive enough as to how far reflection could be carried, if not as to the universally uniform character of distant sheet lightning. For there are in truth, such things as thunderless summer lightnings; lightnings without storms and without dangers; and as frequent under the tropics as in our own temperate latitudes.

There is probably, and more than probably, thunder with these flashes, but at too great a height from us to be heard. Besides, the higher the atmosphere, the more rarified it becomes, and the more rarified the medium, the less intensity there is of sound; but we can scarcely imagine that lightnings can be interchanged without any accompanying report, or that a certain law of nature can be contravened, without the intervention of any higher agency, or the interruption of an opposing law.

There being lightnings without thunder, so there are thunders without lightning. Volney, among many other witnesses of similar phenomena, speaks of violent thunderings one morning at Pontchartrain, under a clear sky, and without lightning; but in a quarter of an hour the heavens clouded thickly over, and a heavy hailstorm fell, the stones as big as his fist. The longest thunder-roll (which seem so interminable to those who are nervous during storms) lasts only from thirty-five to fifty seconds; and the space of time between the roll and the flash varies according to distance, from five, four, three, and even half a second, to forty-two, forty-seven, forty-nine, and seventy-two seconds. But the half-second interval is very rare, and only found in storms of the closest and most violent character. We need scarcely add, that the nearer a storm, the more dangerous. Also, the higher the body, the more likely it is to be struck; as, for instance, all mountains, trees, high buildings, and, in the midst of a plain, men and animals. Trees, bushes, and buildings, are peculiarly lightning conductors, and specially liable to be struck. For this reason it is wise to avoid the neighborhood of trees during a storm; not even trusting to the old poetic legend of the exemption of all the laurel tribe, for love of one fair Daphne; nor to Hugh Maxwell's assertion that the beech, maple, and birch, are anticonductors, like that classic laurel; nor to Captain Dibden's belief in pines; nor in fact, to any private or personal favorite among forest-trees or shrubs; for they are all equally dangerous to human neighbors during a storm, and equally powerful conductors: their power varying only as they are taller or more humid than their fellows.

Thunderbolts have special attractions to certain places as well as to certain objects. No one in New Granada, says Monsieur Ar-

ago, willingly inhabits El Sitio de Tumba Barreto, near the gold mine of the Vega de Supia, because of the frequency of thunderbolts there. Even while Monsieur Boussingault was crossing El Sitio, the black who guided him was struck by lightning. La Loma de Pitago, near Popayan, is another locality of doubtful electric fame. A young botanist, Monsieur Plancheman, was determined to cross La Loma on a stormy day, in spite of all remonstrances, and was struck dead by a thunderbolt. On the twenty-ninth of June, seventeen hundred and sixty-three, a thunderbolt struck the bell-tower of a certain church near Laval, and, entering the church, caused great damage; on the twentieth of June, seventeen hundred and sixty-four, a thunderbolt struck the same bell-tower, entered the church, and melted the same gilding, blackened the same holy vessels, and in the very same spot as the preceding year, made anew two holes which had been filled up. There is no more striking instance on record of the uniform action of natural laws than this. We believe, too, that any inhabitant of a mountainous district could bear out our own assertion and observation, that where once a thunderbolt had been seen to fall, or forked lightning to strike, there surely would the same accidents occur during the worst storms of succeeding years. We may be certain that there is no such thing as chance in nature. Chance is simply our ignorance which cannot foresee necessary consequences, because it does not understand the foregoing laws; there is no such thing as blind unmeaning hazard, without necessity, or without law.

Chemical, mechanical, and physical effects, follow on electrical phenomena; which, any one may see repeated, on a minute scale, by an electrical machine. Lightning melts and vitrifies masses of rock, sometimes covering them with a yellowish-green enamel, studded with opaque or semi-transparent lumps. But it has never been known to melt any metallic substance of a certain thickness. Watch springs, small chains, points, and parts of swords and daggers, fine lines or threads of metal, or thin layers and washes, these have been known to have been thoroughly melted by a lightning stroke. Larger masses, heavy chains, and the like, have been softened, and bent, and twisted, but not melted.

Beyond the thunderbolts of ordinary talk—which mean simply lightning flashes that strike the earth—there are real and actual thunderbolts found in several parts of the globe; ponderable and tangible bodies, masses filled inside with a smooth and brilliant glass, something like vitreous opal, which cuts glass and strikes fire by a steel. These bodies have been subjected to an ignominious disclaimer, Monsieur Hagen, of Konigsberg, came forward as their demonstrator. During a storm at Rauschen, a thunderbolt fell on a birch-tree, leaving two narrow and deep cavities in the ground near the tree. Monsieur Hagen, digging very carefully round one of these cavities came upon a perfect thunderbolt: a pearly grey, vitreous mass covered with small black spots. The wonderful chemical changes and decompositions which electricity makes in all organic bodies are too technical and too numerous for description here.

The mechanical effects of electricity are tremendous. Trees torn up by their roots, large masses of rock hurled great distances, houses flung to the ground like packs of children's cards, roofs, and walls, and furniture strewn in a helpless medley together, are a few of the ordinary mechanical effects of lightning when it strikes any thing on earth. Under the physical effects are ranged the carbonisation or burning of combustible bodies; the wonderful manner in which trees are sometimes barked, and the wood rendered friable, and like dust; in animals, the loss of sight and hearing; paralysis, and apoplexy; though this last group ought rightly to be ranked under vital or pathological effects.

The most terrible storm on record is, perhaps one which occurred at the small village of Châteauneuf les Moustiers, in the department of the Basses-Alpes. During service, the village church was struck by three masses of fire, falling in succession. Nine people were killed, eighty-two were wounded; all had paralysed limbs, as well as other maladies. The curé of Moustiers, who had come over to assist at mass, was found, after the first confusion had subsided, lifeless, scarred with numerous surface wounds, and paralysed. His garments were torn, the gold lace of his stole melted, and the silver buckles of his shoes broken and thrown to the other end of the church. It was with great difficulty that he was recovered, but he suffered from his

wounds for two long months, during which time he never slept; and his arms were paralysed for ever. The church was filled with a thick black smoke through which the only light to be seen was from the flaming of the burning clothes of the poor creatures struck. A young child was torn from its mother's arms, and flung about six paces from her; a youth, at that moment chanting the epistle, felt as if siezed by the throat, and then was flung outside the church door; the missal was torn from his hands and riven to pieces. All the dogs in the church were killed as they lay or stood; and the officiating priest alone clothed in silk, received no hurt. The dogs were all killed, as we said, for lightning strikes animals in preference to men; and numberless instances are to be met with of animals which have been struck and human beings left harmless, in a storm, though, perhaps, the horse has had a rider, the ox a driver, the cow a milker, and the dog a master in the act of caressing him, as the lightning fell. Nothing indeed is so inexplicable to us as the choice which the lightning seems to make. Among a crowd of persons perhaps one or two will be struck and the rest saved; between two, one will lie dead not five feet from the other left unharmed. In a stable where there were thirty-two horses in a line, those at the two extremities only were touched. The lightning passed innocuous over the intervening thirty. This was at Rambouillet, in seventeen hundred and eighty-five; and, in eighteen hundred and eight, at Cronan in Switzerland, five children were sitting in a row on a bench, when a thunderstorm broke out and a flash of lightning killed the first and the last, leaving the centre three unhurt, beyond a somewhat rough shaking. And of five horses in a line, the first and last two were killed, while the middle one, an old blind Dobbin, eat his hay without molestation. But this is a well known electric law, if not a well understood one; the first and last in a chain always feeling the shock the most powerfully, while in a metallic tube there is always most damage and most impression where the lightning or electric current has made its ingress and egress.

A thunderbolt falling in a powder magazine, sometimes simply scatters the powder about, without setting it on fire, as happened at Rouen, on November the fifth, seventeen hundred and fifty-five, and at Venice, on the

eleventh of June, seventeen hundred and seventy-five. But this is as rare as it is incredible. Most frequently the powder is set alight, and the whole place is blown into the air. There was a fearful instance of this at Brescia, in seventeen hundred and sixty-nine, when lightning, falling on a powder magazine, containing above two millions of pounds of gunpowder, belonging to Venice, the magazine exploded, and the sixth part of Brescia was destroyed by the shock; the rest of the city being much shaken and damaged; and above three thousand people killed.

Photographers may recognise in the following anecdotes a greater graphic power in the violent action of lightning than in that of still light. In September, eighteen hundred and twenty-five, the brigantine *Il Buon Servo*, anchored in the bay of Armiro, in the Adriatic, was struck by lightning. Ionian-like a horseshoe was nailed to the mizen-mast; and at the foot of this mast sat Antonio Teodoro, patching his shirt. The lightning fell, and the man was killed on the spot; killed without wounding or burning, only his needle found stuck into his thigh, and down his back a light black and blue mark, ending in the figure of the horseshoe nailed to the mast.

A brigantine belonging to a Doctor Micapulo was struck in the Zantian roads. Five sailors were at the prow; two asleep, three awake. The clothes of two of the men were set on fire; a third lost every hair on his body, save on his head; and a fourth was killed as he lay sleeping. He was lying on his back, and when stripped, they found on his left side the number forty-four distinctly marked,—a mark not there previously; and which was of the size and likeness as the same number in metal marked on the rigging of the ship, and which the lightning had touched in its course.

In the archives of the Académie des Sciences for eighteen hundred and forty-seven, where the preceding anecdote is also preserved, it is related how a certain Dame Morosa de Laguna was seated at her window during a heavy storm. She felt a sudden shock, as a flash more vivid than the rest blinded her; but she soon recovered, and no ill effect followed. The image of a flower, which had been passed over by the electric current, was perfectly and distinctly printed on her leg; and she never lost the mark to the last day of her life.

From Blackwood's Magazine.

LAZARO'S LEGACY.

A TALE OF THE SIEGE OF GIBRALTAR.

BY COLONEL E. B. HAMLEY.

CHAPTER I.

THE note-book of my grandfather, Major Flinders, contains much matter relative to the famous siege of Gibraltar, and he seems to have kept an accurate and minute journal of such of its incidents as came under his own observation. Indeed, I suspect the historian Drinkwater must have had access to it, as I frequently find the same notabilia chronicled in pretty much the same terms by both these learned Thebans. But while Drinkwater confines himself mostly to professional matters—the state of the fortifications, nature of the enemy's fire, casualties to the soldiery, and the like—and seldom introduces an anecdote interesting to the generality of readers without apologising for such levity, my grandfather's sympathies seem to have been engrossed by the sufferings of the inhabitants deprived of shelter, as well as of sufficient food, and helplessly witnessing the destruction of their property. Consequently, his journal, though quite below the dignity of history, affords, now and then, a tolerably graphic glimpse of the beleaguered town.

From the discursive and desultory nature of the old gentleman's style, as before hinted, it would be vain to look for a continuous narrative in his journal, even if it contained materials for such. But here and there a literary Jack Horner might extract a plum or two from the vast quantity of dough—of reflections, quotations, and all manner of irrelevant observations, surrounding them. The following incidents, which occurred at the most interesting period of the long and tedious siege, appear to me to give a fair idea of some of the characteristics of the time, and of the personages who figured in it; and accordingly, after subjecting them to a process analogous to gold-washing, I present them to the reader.

After a strict blockade of six months, reducing the garrison to great extremity for want of provisions, Gibraltar was relieved by Sir George Rodney, who landed a large quantity of stores. But about a year after his departure, no further relief having reached them except casual supplies from trading vessels that came at a great risk to the Rock, their exigencies were even worse than before. The issue of provisions was limited in quan-

tity, and their price so high, that the families, even of officers, were frequently in dismal straits. This has given rise to a wooden joke of my grandfather's, who although he seldom ventures on any deliberate facetiousness, has entitled the volume of his journal relating to this period of the siege, *The Straits of Gibraltar*. He seems to have estimated the worth of his wit by its rarity, for the words appear at the top of every page.

The 11th of April 1781 being Carlota's birthday, the Major had invited Owen (now Lieutenant Owen) to dine with them in honor of the occasion. Owen was once more, for the time, a single man; for Juana, having gone to visit her friends in Tarifa just before the commencement of the siege, had been unable to rejoin her husband. In vain had Carlota requested that the celebration might be postponed till the arrival of supplies from England should afford them a banquet worthy of the anniversary—the Major, a great stickler for ancient customs, insisted on its taking place forthwith. Luckily, a merchant-man from Minorca had succeeded in landing a cargo of sheep, poultry, vegetables, and fruit the day before, so that the provision for the feast, though by no means sumptuous, was far better than any they had been accustomed to for many months past. The Major's note-book enables me to set the materials for the dinner, and also its cost, before the reader—viz., a sheep's head, price sixteen shillings (my grandfather was too late to secure any of the body, which was rent in pieces, and the fragments carried off as if by wolves, ere the breath was well out of it)—a couple of fowls, twenty shillings (scraggy creatures, says my ancestor in a parenthesis)—a ham, two guineas—raisins and flower for a pudding, five shillings—eggs (how many, the deponent sayeth not), sixpence each—vegetables, nine and sixpence—and fruit for dessert, seven and tenpence. Then, for wine, a Spanish merchant, a friend of Carlota's, had sent them two bottles of champagne and one of amontillado, a present as generous then as a hogshead would have been in ordinary times; and there was, moreover, some old rum, and two lemons for punch. Although, there was probably no dinner half so good that day in Gibraltar.

At the appointed hour, the Major was reading in his quarters (a tolerably commodious house near the South Barracks, and at

some distance outside the town) when Owen appeared.

"You're punctual, my boy; and punctuality's a cardinal virtue about dinner-time," said my grandfather, looking at his watch; "three o'clock exactly. And now we'll have dinner. I only hope the new cook is a tolerable proficient."

"What's become of Mrs. Grigson?" asked Owen. "You haven't parted with that disciple of Apicius, I should hope?"

"She's confined again," said my grandfather, sighing; "a most prolific woman that! It certainly can't be above half-a-year since her last child was born, and she's going to have another. 'Tis certainly not longer ago than last autumn," he added, musingly.

"A wonderful woman," said Owen; "she ought to be purchased by the Government, and sent out to some of our thinly populated colonies. And who fills her place?"

"Why, I'll tell you," responded the Major. "Joe Trigg, my old servant, is confined too—in the guardroom, I mean, for getting drunk—and I've taken a man of the regiment, one Private Bags, for a day or two, who recommended his wife as an excellent cook. She says the same of herself; but this is her first trial, and I'm a little nervous about it."

"Shocking rascal that Bags," said Owen.

"Indeed!" said my grandfather; "I'm sorry to hear that. I didn't inquire about his character. He offered his services, saying he came from the same part of England as myself, though I don't recollect him."

"Terrible work this blockade," said the Major after a pause. "Do you know, if I was a general in command of a besieging army, I don't think I could find it in my heart to starve out the garrison. Consider now, my dear boy (laying his forefinger on Owen's arm)—consider now, several thousand men with strong appetites, never having a full meal for months together. And just, too, as my digestion was getting all right—for I never get a nightmare now, though I frequently have the most delicious dreams of banquets that I try to eat, but wake before I get a mouthful. 'Tis enough to provoke a saint. And as if this was not enough, the supply of books is cut off. The *Weekly Entertainer* isn't even an annual entertainer to me. The last number I got was in '79, and I've been a regular subscriber these twelve

years. There's the *Gentleman's Magazine*, too. The last one reached me a year since, with a capital story in it, only half-finished, that I'm anxious to know the end of; and also a rebus that I've been longing to see the answer to. 'The answer in our next,' says the tantalising editor. It's a capital rebus—just listen now. 'Two-thirds of the name of an old novelist, one-sixth of what we all do in the morning, and a heathen deity, make together a morsel fit for a king.' I've been working at it for upwards of a year, and I can't guess it. Can you?"

"Roast pig with stuffing answers the general description," said Owen. "That, you'll admit, is a morsel fit for a king."

"Pooh!" said my grandfather. "But you must really try now. I've run through the mythology, all that I know of it, and tried all the old novelists' names, even Boccaccio and Cervantes. Never were such combinations as I have made—but can't compound any thing edible out of them. Again, as to what we do in the morning: we all shave (that is, all who have beards)—and we yawn, too; at least I do, on waking; but it must be a word of six letters. Then, who can the heathen deity be?"

"Pan is the only heathen deity that has any thing to do with cookery," said Owen. "Frying-pan, you know, and stew-pan."

My grandfather caught at the idea, but had not succeeded in making any thing of it, or in approximating to the solution of the riddle, when Carlota entered from an inner room.

"I wish, my dear, you would see about the dinner," said the Major; "'tis a quarter past three."

"*Si, my vida*" (yes, my life), said Carlota, who was in the habit of bestowing lavishly on my grandfather the most endearing epithets in the Spanish language, some of them, perhaps, not particularly applicable—*niño de mi alma* (child of my soul), *luz de mis ojos* (light of my eyes), and the like; none of which appeared to have any more effect on the object of them than if they had been addressed to somebody else.

Carlota rung the bell, which nobody answered. "Nurse is busy with *de niña*," she said, when nobody answered it; "I go myself to *de cocina*" (kitchen)—she spoke English as yet but imperfectly.

"There's one comfort in delay," said the

Major; " 'tis better to boil a ham too much than too little—and yet I shouldn't like it overdone either."

Here they were alarmed by an exclamation from Carlota. "*Ah Dios! Caramba! Ven, ven, mi niño!*" cried she from the kitchen.

The Major and Owen hastened to the kitchen, which was so close at hand that the smell of the dinner sometimes anticipated its appearance in the dining-room. Mrs. Bags, the new cook, was seated before the fire. On the table beside her was an empty champagne bottle, the fellow to which protruded its neck from a pail in one corner, where the Major had put it to cool; and another bottle of more robust build, about half-full, was also beside her. The countenance of Mrs. Bags wore a pleasant and satisfied, though not very intelligent smile, as she gazed steadfastly on the ham that was roasting on a spit before the fire—at least one side of it was done quite black, while the other oozed with warm grease; for the machinery which should have turned it was not in motion.

"*Caramba!*" exclaimed Carlota, with uplifted hands. "*Que picarilla!*"—(What a knave of a woman!)

"Gracious heavens!" said my grandfather, "she's roasting it! Who ever heard of a roast ham?"

"A many years," remarked Mrs. Bags, without turning her head, and still smiling pleasantly, "have I lived in gentlemen's families—" Here this fragment of autobiography was terminated by a hiccup.

"And the champagne bottle is empty," said Owen, handling it. "A nice sort of cook this of yours, Major. She seems to have constituted herself butler, too."

My grandfather advanced and lifted the other bottle to his nose. "'Tis the old rum," he ejaculated with a groan. "But if the woman has drunk all this 'twill be the death of her. Bags," he called, "come here."

The spouse of Mrs. Bags emerged from a sort of scullery behind the kitchen—a tall bony man, of an ugliness quite remarkable, and with a very red face. He was better known by his comrades as Tongs, in allusion probably to personal peculiarities; for the length of his legs, the width of his bony hips, and the smallness of his head, gave him some distant resemblance to that article of domestic iron-mongery; but as his wife called herself

Mrs. Bags, and he was entered in the regimental books by that name, it was probably his real appellation.

"Run directly to Dr. Fagan," said the Major, "and request him to come here. Your wife has poisoned herself with rum."

"'Tisn't rum," said Bags, somewhat thickly—" 'tis fits."

"Fits!" said my grandfather.

"Fits," doggedly replied Mr. Bags, who seemed by no means disturbed at the alleged indisposition of his wife—"she often gets them."

"Don't alarm yourself, Major," said Owen, "I'll answer for it she hasn't drunk *all* the rum. The scoundrel is half-drunk himself, and smells like a spirit-vault. You'd better take your wife away," he said to Bags.

"She can leave if she ain't wanted," said Private Bags, with dignity; "we never comes where we ain't wanted." And he advanced to remove the lady. Mrs. Bags at first resisted this measure, proceeding to deliver an eulogium on her own excellent qualities, moral and culinary. She had, she said, the best of characters, in proof of which she made reference to several persons in various parts of the United Kingdom, and, as she spoke, she smiled more affably than ever.

"*La picarilla no tiene verguenza*" (the wretch is perfectly shameless), cried Carlota, who, having hastily removed the ham from the fire, was now looking after the rest of the dinner. The fowls, cut up in small pieces, were boiling along with the sheep's head, and, probably to save time, the estimable Mrs. Bags had put the rice and raisins destined for a pudding into the pot along with them—certainly, as Owen remarked, a bold innovation in cookery.

Still continuing to afford them glimpses of her personal history, Mrs. Bags was at length persuaded to retire along with her helpmate.

"What astonishing impudence," said the Major, shutting the door upon her, "to pretend to be a cook, and yet know no better than to roast a ham!"

Carlota, meanwhile, was busy in remedying the disaster as far as she could; cutting the ham into slices and frying it, making a fricassee of the fowls, and fishing the raisins out of the pot, exclaiming bitterly all the while, in English and Spanish, against the *tunanta* (equivalent to female scoundrel or scamp)

who had spoilt the only nice dinner her *po-brecilo*, her *niño*, her *querido* (meaning my grandfather), had been likely to enjoy for a long time, stopping occasionally in her occupations to give him a consolatory kiss. However, my grandfather did not keep up the character of a martyr at all well: he took the matter really very patiently; and when the excellent Carlota had set the dinner on the table, and he tasted the fine flavor of the maltreated ham, he speedily regained his accustomed good-humor.

"It is very strange," he said presently, while searching with a fork in the dish before him, "that a pair of fowls should have only three wings, two legs, and one breast between them."

It certainly was not according to the order of nature; nevertheless the fact was so, all my grandfather's researches in the dish failing to bring to light the missing members. This, however, was subsequently explained by the discovery of the remains of these portions of the birds in the scullery, where they appeared to have been eaten after being grilled; and Mrs. Bags' reason for adopting this mode of cooking them was also rendered apparent—viz. that she might secure a share for herself without immediate detection.

However, all this did not prevent them from making the best of what was left, and the Major's face beamed as he drank Carlota's health in a glass of the remaining bottle of champagne, as brightly as if the dinner had been completely successful.

"It is partly my fault, Owen," said the Major, "that you haven't a joint of mutton instead of this sheep's head. I ought to have been sharper. The animal was actually sold in parts before he was killed. Old Chutterbuck had secured a haunch, and he a single man, you know—'tis thrown away upon him. I offered him something handsome for his bargain, but he wouldn't part with it."

"We're lucky to get any," returned Owen. "Never was such a scramble. Old Fiskin, the commissary, and Mrs. O'Regan, the Major's wife, both swore the left leg was knocked down to them; neither would give in, and it was put up again, when the staff doctor, Pursum, who had just arrived in a great hurry, carried it off by bidding eightpence more than either. Not one of the three has spoken to either of the others since; and people say," added Owen, "Mrs. O'Regan

avers openly that Fiskin didn't behave like a gentleman."

"God knows!" said my grandfather, "'tis a difficult thing in such a case to decide between politeness and a consciousness of being in the right. Fiskin likes a good dinner."

The dinner having been done justice to, Carlota removed the remains to a side-table, and the Major was in the act of compounding a bowl of punch, when there was a knock at the door. "Come in," cried Carlota.

A light and timid step crossed the narrow passage separating the outer door from that of the room they sat in, and there was another hesitating tap at this latter. "Come in," again cried Carlota, and a young girl entered with a basket on her arm.

"'Tis Esther Lazaro," said Carlota in Spanish. "Come in, child; sit here and tell me what you want."

Esther Lazaro was the daughter of a Jew in the town, whose occupations were multifarious, and connected him closely with the garrison. He discounted officers' bills, furnished their rooms, sold them every thing they wanted—all at most exorbitant rates. Still, as is customary with military men, while perfectly aware that they could have procured what he supplied them with elsewhere at less expense, they continued to patronise and abuse him rather than take the trouble of looking out for a more liberal dealer. As the difficulties of the garrison increased, he had not failed to take advantage of them, and it was even said he was keeping back large stores of provisions and necessaries till the increasing scarcity should enable him to demand his own terms for them.

His daughter was about fifteen years old—a pretty girl, with hair of the unusual color of chestnut, plaited into thick masses on the crown of her head. Her skin was fairer than is customary with her race—her eyes brown and soft in expression, her face oval, and her figure, even at this early age, very graceful, being somewhat more precocious than an English girl's at those years. She was a favorite with the ladies of the garrison, who often employed her to procure feminine matters for them. Carlota, particularly, had always treated her with great kindness—and hence the present visit. She had come, she said timidly, to ask a favor—a great favor. She had a little dog that she loved. (Here a great commotion in the basket seemed to say

she had brought her *protégé* with her.) He had been given to her by a young school friend who was dead, and her father would no longer let her keep it, because, he said, these were no times to keep such creatures, when provisions, even those fit for a dog, were so dear. He was a very good little dog—would the Señora take him?

"Let us look at him, Esther," said Owen—"I see you have brought him with you."

"He is not pretty," said Esther, blushing as she produced him from the basket. He certainly was not, being a small cur, marked with black and white, like a magpie, with a tail curling over his back. He did not appear at all at his ease in society, for he tried to shrink back again into the basket.

"He was frightened," she said, "for he had been shut up for more than a month. She had tried to keep him in her bedroom, unknown to her father, feeding him with part of her own meals; but he had found it out, and had beaten her, and threatened to kill the dog if he ever saw it again."

"*Pobrecito!*" (poor little thing) said the good Carlota—"we shall take good care of it. *Toma*" (take this), offering him a bit of meat. But he crept under her chair, with his tail so depressed, in his extreme bashfulness, that the point of it came out between his fore-legs.

Carlota would have made the young Jewess dine there forthwith, at the side-table still spread with the remains of the dinner, for social differences of position were lost in the general misery; but she refused to take any thing, only sipping once from a glass of wine that Carlota insisted on making her drink of. Then she rose, and, having tied the end of a string that was fastened to the dog's collar to the leg of the table to prevent his following her, took her leave, thanking Carlota very prettily.

"*A Dios, Sancho!*" she said to the little dog, who wagged his tail and gave her a piteous look as she turned to go away—"A *Dios, Sancho*," she repeated, taking him up and kissing him very affectionately. The poor child was ready to cry.

"Come and see him every day, my child," said Carlota, "and when better times come you shall have him again."

CHAPTER II.

LAZARO the Jew was seated towards dusk

that evening in a sort of office partitioned off by an open railing from a great store filled with a most motley collection of articles. Sofas, looking-glasses, washing-stands—bales of goods in corded canvass—rows of old boots purchased from officers' servants—window curtains lying on heaps of carpeting and matting—bedsteads of wood and iron—crockery and glass—were all piled indiscriminately. Similar articles had also overflowed along the passage down the wooden steps leading to the square stone court below, which was lumbered with barrels, packing-cases, and pieces of old iron. This court was entered from the street, and an arched door on one side of it, barred and padlocked, opened on a large warehouse, which nobody except the Jew had set foot in for many months.

The Jew himself was a spare, rather small man, with a thin eager face, small sharp features, and a scanty beard. Being by descent a Barbary Jew, he wore the costume peculiar to that branch of his race—a black skull-cap; a long-skirted, collarless, cloth coat, buttoned close, the waist fastened with a belt; loose light-colored trousers and yellow slippers—altogether he looked somewhat like an overgrown Blue-coat Boy. He was busied in turning over old parchment-covered ledgers, when an officer entered.

Von Dessel was a captain in Hardenberg's Hanoverian regiment. He was a square, strong-built man, about forty, with very light hair, as was apparent since the governor's order had forbidden the use of powder to the troops, in consequence of the scarcity of flour. His thick, white, overhanging eyebrows, close lips, and projecting under jaw, gave sternness to his countenance.

"Good afternoon, captain," said the Jew; "what I do for you to-day, sare?"

"Do for me! By Gott, you have done for me already, with your cursed Hebrew tricks," said the captain. The German and the Jew met on a neutral ground of broken English.

"I always treat every gentleman fair, sare," said the Jew. "I tell you, captain, I lose by that last bill of yours."

"*Der teufel!* who gains, then?" said Von Dessel, "for you cut me off thirty per cent."

The Jew shrugged his shoulders.

"I don't make it so, sare; the siege makes it so. When the port is open, you shall have more better exchange."

"Well, money must be had," said the German. "What will you give now for my bill for twenty pound?"

The Jew consulted a book of figures—then made some calculations on paper—then appeared to consider intently.

"Curse you, speak!" said the choleric captain. "You have made up your mind about how much roguery long ago."

"Captain, sare, I give you feefy dallars," said the Jew.

The captain burst forth with a volley of German execrations.

"Captain," said the Jew presently, "I like to please a gentleman if I can. I give you one box of cigars besides—real Cubas—one hundred and feefy in a box."

The captain at this broke forth again, but checked himself presently on the entrance of the Jew's daughter, who now returned from the Major's. She advanced quietly into the room, made a little bow to the captain, took off and laid aside her shawl, and, taking up some work, sat down and began to sew.

Von Dessel resumed his expostulation in a milder tone. The Jew, however, knew the money was necessary to him, and only yielded so far as to increase his box of cigars to two hundred; and the captain, finding he could get no better terms from him, was forced to agree. While the Jew was drawing out the bills, the German gazed attentively at Esther, with a good deal of admiration expressed in his countenance.

"I can't take the money now," said he, after signing the bills. "I am going on duty. Bring it to me to-morrow morning, at nine o'clock."

"I'm afraid I can't, sare," said Lazaro; "too moch business. Couldn't you send for it, captain?"

"Not possible," said the German; "but you must surely have somebody that might bring it—some trustworthy person you know." And his eye rested on Esther.

"There's my dater, sare," said the Jew—"I shall send her, if that will do."

"Good," said the captain, "do not forget," and quitted the room forthwith.

He was scarcely gone when a pair with whom the reader is already slightly acquainted, Mr. and Mrs. Bags, presented themselves. The effects of their morning conviviality had in a great measure disappeared.

"Your servant, sir," said Bags. The Jew nodded.

"We've got a few articles to dispose of," pursued Mr. Bags, looking round the room cautiously. "They was left us," he added in a low tone, "by a diseased friend."

"Ah!" said the Jew, "never mind where you got 'em. Be quick—show them."

Mrs. Bags produced from under her cloak, first a tin tea-kettle, then a brass saucepan; and Mr. Bags, unbuttoning his coat, laid on the table three knives and a silver fork. Esther, passing near the table at the time, glanced accidentally at the fork, and recognised the Flinders crest—a talbot, or old English bloodhound.

"Father," said she hastily, in Spanish, "don't have any thing to do with that—it must be stolen." But the Jew turned so sharply on her, telling her to mind her work, that she retreated.

The Jew took up the tea-kettle, and examined the bottom to see that it was sound—did the same with the saucepan—looked at the knives narrowly, and still closer at the fork—then ranged them before him on the table.

"For dis," said he, laying his hand on the tea-kettle, "we will say one pound of rice; for dis (the saucepan) two pounds of corned beef; for de knives, a bottle of rum; and for de fork, seex ounces of the best tea."

"Curse your tea!" said Mr. Bags.

"Yes!" said Mrs. Bags, who had with difficulty restrained herself during the process of valuation, "we doesn't want no tea. And the things is worth a much more than what you say: the saucepan's as good as new, and the fork's silver—"

"Plated," said the Jew, weighing it across his finger.

"A many years," said Mrs. Bags, "have I lived in gentlemen's families, and well do I know plate from silver. I've lived with Mrs. Milson of Pidding Hill, where every thing was silver, and nothing plated, even to the handles of the doors; and a dear good lady she was to me; many's the gown she giv me. And I've lived with—"

Here the Jew unceremoniously interrupted the train of her recollections by pushing the things from before him. "Take what I offer, or else take the things away," said he, shortly.

Mr. and Mrs. Bags grumbled considerably. The tea they positively refused at any price:

Mr. Bags didn't like it, and Mrs. Bags said it disagreed with her. So the Jew agreed to give them instead another bottle of rum, a pound of onions, and two pounds of beef; and with these terms they at length closed, and departed with the results of their barter.

During the altercation, a soldier of another regiment had entered, and stood silently awaiting his turn to be attended to. He was a gaunt man, with want written legibly in the hollows of his face and the dismal eagerness of his eye. He now came forward, and with trembling hands unfolded an old gown, and handed it to the Jew.

"'Tis no good to me," said the latter, giving it back, after holding it against the light; "nothing but holes."

"But my wife has no other," said the man: "'tis her last stitch of clothes, except her petticoat and a blanket. I've brought every thing else to you."

The Jew shrugged his shoulders and spread out his hands, in token that he could not help it.

"I swear 'tis her last!" reiterated the man, as if he really fancied this fact must give the garment as much value in the Jew's eyes as in his own.

"I tell you I won't have it!" said the Jew, testily.

"Give me only a loaf for it, or but one pound of potatoes," said the soldier: "'tis more than my wife and four children have had among them for two days. Half-rations for one, among six of us, is too hard to live."

"A pound of potatoes," said the Jew, "is worth four reals and a half—eighteenpence; your wife's gown is worth—nothing!"

"Then take this," said the man, beginning, frantically to pull off his uniform coat; "any thing is better than starving."

The Jew laughed. "What!" said he, "you think I don't know better than to buy a soldier's necessities, eh? Ah, ah! no such a fool, I think, my friend. What your captain say?—eh?"

The man struck his hand violently on the table. "Then give me,—or lend me," said he, "some food, much or little, and I'll work for you every hour I'm off duty till you're satisfied. I will, Mr. Lazaro, so help me God!"

"I got plenty of men to work for me,"

said Lazaro; "don't want any more. Come again, when you've got something to sell, my friend."

The man rolled up the gown without speaking, then lifted it over his head, and dashed it into the furthest corner of the store. He was hurrying from the place, when, as if unwilling to throw away his last chance, he turned back, gathered it up, and, thrusting it under his arm, quitted the store with lingering steps, as if he even yet hoped to be called back. No such summons reached him, however; but, immediately after he was gone, Esther rose and stole softly down the stairs. She overtook him at the street-door opening from the court before mentioned, and laid her hand on his arm. The man turned and glared on her. "What!—he'll buy it, will he?" said he.

"Hush!" said Esther—"keep it for your poor wife. Look; I have no money, but take these," and she placed in his hand two earrings hastily detached from her ears.

The man stood looking at her for a space, as if stupefied, without closing his hand on the trinkets that lay on the palm; then, suddenly rousing himself, he swore, with tears in his eyes, that for this service he would do for her any thing on earth she should require from him; but she only begged him to go away at once, and say nothing, lest her father should overhear the transaction, who would certainly be angry with her for it.

Bags and his wife had stopt in a corner of the court to pack up their property in a commodious form for conveyance, and had witnessed this scene in silence. As soon as the soldier had, in compliance with Esther's entreaties, disappeared, Bags came forward.

"And your father would be angry, would he, my dear?" said he.

"Oh, very—oh, so angry! Please don't stop me," she said, trying to pass him.

"And what'll ye give me not to tell him, now?" asked Mr. Bags. "Ain't ye got nothing for me?"

"No—oh, no—indeed, nothing. Do let me pass."

"Yes, you have; you've got this, I think," said Bags, snatching at a silver-mounted comb glistening in her hair, which, thus loosened, all fell down on her shoulders as she darted past him. "And now," said Mr. Bags, in-

specting his prize, "I think me and that 'ere cheating Jew is quits for the silver fork. I'll allow it's plaited now."

CHAPTER III.

EARLY the next morning (the 12th of April) a rumor went through the town that an English fleet was signalled as in sight. The news roused the starving people like electricity. The pale spectres of men that, on the previous day, had stalked so gauntly through the dreary streets—the wretched, sinking women, and children careworn as grandfathers—poured forth, with something like a natural light in their hollow eyes, to witness the joyful spectacle. The sea-wall of the city was like the margin of a vast pool of Bethesda, thronged with hopeful wretches awaiting the coming of the angel.

The streets were instantly deserted. Those who could not leave their homes got on the housetops, but the great mass of the population spread itself along the line-wall, the Grand Parade and Alameda, and the heights skirting the chief slopes of the Rock. Moors and Jews, Spaniards and English, citizens and soldiers, men, women, and children, of all ages, grades, and nations, ranged themselves indiscriminately wherever they could obtain a view of the sea.

For sometime the wished-for sight was delayed by a thick fog that spread itself across the Straits and the entrance of the bay. A murmur rose from each successive rank of people that forced itself into a front place on the line-wall. Terrible doubts flew about, originating no one knew where, but gaining strength and confirmation as they passed from mouth to mouth. On the summit of the Rock behind them the signal for a fleet flew steadily from the mast at Middle Hill; but still in this, as in all crowds, were some of little faith, who were full of misgivings. Many rushed up to the signal-station, unable to bear the pain of the delay. My grandfather noticed the Jew Lazaro among the throng, watching the event with an anxious eye, though his anxiety was from the opposite cause to that of most of the spectators. The arrival of supplies would at once bring down the price of provisions, and rob him, for the present, of his expected profits; and as each successive rumor obtained credence with the crowd, his countenance brightened as their hopes fell, and sank as they again emerged from despondency.

Not far from him was an old Genoese woman, wearing the quaint red cloak, trimmed with black velvet, that old Genoese women usually wear in Gibraltar. She hovered round the skirts of the crowd, occasionally peering beneath an uplifted arm, or thrusting it between two obstructing figures to catch a glimpse, though it was evident that her dim eyes would fail to discern the fleet when it should come in view. Her thin shrivelled features, relieved against her black hood, were positively wolfish from starvation. She frequently drew one hand from beneath her cloak, and gazed at something she held in it—then muttering, she would again conceal it. My grandfather's curiosity was roused. He drew near and watched for the reappearance of the object that so engrossed her. It was a blue mouldy crust of bread.

The wished-for spectacle was at length revealed. "As the sun became more powerful," says Drinkwater, rising into positive poetry with the occasion, "the fog gradually rose like the curtain of a vast theatre, discovering to the anxious garrison one of the most beautiful and pleasing scenes it is possible to conceive. The convoy, consisting of near a hundred vessels, were in a compact body, led by several men-of-war—their sails just filled enough for steerage, while the majority of the line-of-battle ships lay to under the Barbary shore, having orders not to enter the bay, lest the enemy should molest them with their fireships."

Then rose a great shout—at once the casting-off of long-pressing anxiety and the utterance of delight. Happy tears streamed down haggard faces overgrown with hair, and presently men turned to one another, smiling in the face of a stranger neighbor as in that of an old friend, while a joyful murmur, distilled from many languages, rose upward. Assuredly, if blessings are of any avail, the soul of Admiral Darby, who commanded the relieving fleet, is at this moment in Paradise.

Friends and relations now began to search for one another in the crowd, which broke quickly into knots, each contriving how to enjoy together the plenty that was to descend upon them. My grandfather's eye at this juncture was again attracted by the old Genoese woman. When the crowd shouted, she screened her eyes with her withered hand, and, with her nostril spread, her chin fallen, in her eagerness gazed toward the sea—but presently shook her head, discerning nothing.

Then she plucked by the arm a joyful Spaniard.

"*Es verdad? Por Dios, es verdad?*" she cried "*jura! jura!*"—(Is it true? Swear by Heaven it is true.)

"*Si si,*" said the Spaniard, pointing; "*es verdad*" ('tis true). "You may see them yourself."

Instantly the old woman, for the last time, drew forth her treasured crust, and began to devour it, muttering, as she tore away each mouthful, "*Mas mañana! mas mañana!*" (I shall have more to-morrow—more to-morrow!)

After the crowd had partially dispersed, Owen was returning to his quarters to breakfast, when, as he paused to open the door, he heard a voice he thought he knew crying out in affright in the rooms opposite, where Von Dessel resided. Presently the door of the quarters was opened, and the flushed and frightened face of Esther Lazaro appeared, as she struggled to escape from Von Dessel, who held her arm.

"Señor, Señor, speak to the gentleman!" she cried to Owen

"Leetle foolish girl," said Von Dessel, grinning a smile on seeing him; "she frightens at nothing. Come in, child"—trying to shut the door.

"Why don't you let her alone?" said Owen: "don't you see she doesn't like you?"

"Pouf!" said the captain. "We all have trouble with them sometimes—you must know that well."

"No, by Jupiter!" cried Frank Owen. "If I couldn't gain them willingly, they might go to the devil for me. But you hurt her—pray let her go—you must indeed."

"Do you mind your own affairs," said the captain, "and don't meddle;" and, exerting his strength, he drew Esther in, and partially succeeded in shutting the door—she calling the while again on Owen to help her. Frank stepped forward, and, putting his foot against the door, sent it into the room, causing Captain Von Dessel, who was behind it, to stagger back with some violence, and to quit his hold of Esther, who ran down stairs.

"Very good, sir," said the captain, stalking grimly out of his room, pale with rage. "You have thought right to interfere with me, and to insult me. By Gott! I will teach you better, young man. Shall we say in one hour, sir, in the Fives' Court?"

Owen nodded. "At your pleasure," said he, and, entering his own quarters, shut the door.

Meanwhile my grandfather walked about with the telescope he had brought with him to look after the fleet under his arm, enjoying the unusual sight of happy faces around him. And he has remarked it as a singular feature of humanity, that this prospect of relief from physical want inspired a far more deep and universal joy than he had witnessed in any public rejoicings arising from such causes as loyalty or patriotism evinced at a coronation or the news of a great victory, or the election of a popular candidate; and hence my grandfather takes occasion to express a fear that human nature is, except among the rarer class of souls, more powerfully and generally influenced by its animal propensities than by more refined causes.

He was so engrossed with philanthropic pursuit of enjoying the joy of the multitude, and the philosophic of one of extracting moral reflections therefrom, that he quite forgot he had not breakfasted. He was just beginning to be reminded of the circumstance by a feeling of hollowness in the region of the stomach, and to turn his steps homeward, when a light hand was laid on his arm. My grandfather turned, and beheld the face of the young Jewess looking wistfully in his.

She began at first to address him in Spanish—the language she spoke most naturally; but, quickly perceiving her mistake on hearing the extraordinary jargon in which he replied (for it is a singular fact that nobody but Carlota, who taught him, could understand my grandfather's Spanish), she exchanged it for his own tongue. She told him in a few hurried words of the quarrel Owen had incurred on her account with Von Dessel, and of the challenge she had overheard given by the latter, beseeching the Major to hasten to prevent the result.

"In the Fives' Court! in an hour!" said my grandfather. "When did this happen?"

Esther thought nearly an hour ago—she had been almost so long seeking my grandfather.

"I'll go, child—I'll go at once," said the Major. "With Von Dessel, too, as if he could find nobody else to quarrel with but the best swordsman in the garrison. 'Souls and bodies,'" quoted my grandfather, "'hath he divorced three.'"

With every stride he took, the Major's uneasiness was augmented. At any time his anxiety would have been extreme while peril threatened Frank; but now, when he was calculating on him as a companion at many a well-spread table, when they might forget their past miseries, it peculiarly affected him.

"To think," muttered my grandfather, "that these two madmen should choose a time when everybody is going to be made so happy, by getting plenty to eat, to show their gratitude to Providence by cutting one another's throats!"

The danger to Owen was really formidable; for, though a respectable swordsman, he was no unusual proficient in the graceful art, while his opponent was not only, as my grandfather had said, the best swordsman in the garrison, but perhaps the best at that time in the army. As a student in Germany he had distinguished himself in some sanguinary duels; and since his arrival in Gibraltar, a Spanish gentleman, a very able fencer, had fallen beneath his arm.

"God grant," said my grandfather to himself, as he neared the Fives' Court, "that we may settle this without the perdition of souls. Frank, my dear boy, we could better spare a better man!"

On attempting to enter the Fives' Court he was stopped by the marker, posted at the door. "It was engaged," he said, "for a private match."

"Ay, ay," said my grandfather, pushing past him; "a pretty match, indeed! Ay, ay—pray God we can stop it!"

Finding the inner door locked, the Major, who was well acquainted with the locality—for, when he had nothing else particular to do, he would sometimes mark for the players for a rubber or two—ascended the stairs to the gallery.

About the centre of the court stood the combatants. All preliminaries had been gone through—for they were stripped to their shirts—and the seconds (one a German, the adjutant of Hardenberg's regiment—the other, one Lieutenant Rushton, an old hand at these affairs, and himself a fire-eater) stood by, each with a spare sword in his hand. In a corner was the German regimental surgeon, his apparatus displayed on the floor, ready for an emergency. Rushton fully expected Owen to fall, and only hoped he might escape with-

out a mortal wound. Von Dessel himself seemed of the same opinion, standing square and firm as a tower, scarcely troubling himself to assume an attitude, but easy and masterly withal. Both contempt and malice were expressed for his antagonist in his half-shut eyes and the sardonic twist of the corners of his mouth.

"Owen, Owen, my boy!" shouted my grandfather, rushing to the front of the gallery, and leaning over, as the swords crossed—"stop, for God's sake. You mustn't fight that swash-buckler! They say he hath been fencer to the Sophy," roared the Major, in the words of Sir Toby Belch.

The combatants just turned their heads for a moment, to look at the interrupter, and again crossed swords.

Immediately on finding his remonstrance disregarded, the Major descended personally into the arena—not by the ordinary route of the stairs, but the shorter one of a perpendicular drop from the gallery, not effected with the lightness of a feathered Mercury. But the clatter of his descent was lost in the concussion of a discharge of artillery that shook the walls. Instantly the air was alive with shot and hissing shells; and before the echoes of the first discharge had ceased, the successive explosion of the shells in the air, and the crashing of chimneys, shattered doors, and falling masonry, increased the uproar. One shell burst in the court, filling it with smoke. My grandfather felt, for a minute, rather dizzy with the shock. When the smoke cleared, by which time he had partially recovered himself, the first object that caught his eyes was Von Dessel lying on the pavement, and the doctor stooping over him. The only other person hurt was Rushton, a great piece of the skin of whose forehead, detached by a splinter, was hanging over his right eye. Von Dessel had sustained a compound fracture of the thigh, while the loss of two fingers from his right hand had spoiled his thrust in tierce for ever.

"What can be the matter?" said my grandfather, looking upward, as a second flight of missiles hurtled overhead.

"Matter enough," quoth Rushton, mopping the blood from his eye with his handkerchief; "those cursed devils of Spaniards are bombarding the town."

The Major went up to Owen, and squeezed

his hand. "We won't abuse the Spaniards for all that," said he—"they've saved your life, my boy."

CHAPTER IV.

ENRAGED at seeing their blockade evaded by the arrival of Darby's fleet, the Spaniards revenged themselves by directing such a fire upon Gibraltar, from their batteries in the Neutral Ground, as in a short time reduced the town to a mass of ruins. This misfortune was rendered the more intolerable to the besieged, as it came in the moment of exultation and general thanksgiving. While words of congratulation were passing from mouth to mouth, the blow descended, and "turned to groans their roundelay."

The contrast between the elation of the inhabitants when my grandfather entered the Fives' Court, and their universal consternation and despair when he quitted it, was terrible. The crowd that had a few minutes before so smilingly and hopefully entered their homes, now fled from them in terror. Again the streets were thronged by the unhappy people, who began to believe themselves the sport of some powerful and malevolent demon. Whole families, parents, children, and servants, rushed together into the streets, making their way to the south to escape the missiles that pursued them. Some bore pieces of furniture snatched up in haste, and apparently seized because they came first to hand; some took the chairs they had been sitting on; one man my grandfather noticed bearing away with difficulty the leaf of a mahogany table, leaving behind the legs which should have supported it; and a woman had a crying child in one hand, and in the other a gridiron, still reeking with the fat of some meat she had been cooking. Rubbish from the houses began to strew the streets; and here and there a ragged breach in a wall rent by the cannon afforded a strange incongruous glimpse of the room inside, with its mirrors, tables, and drapery, just as the inhabitants left them. Armed soldiers were hastening to their different points of assembly, summoned by bugles that resounded shrilly amid the din, and thrusting their way unceremoniously through the impeding masses of fugitives.

The house of the Jew Lazaro was one of the first that was seriously injured. The blank wall of the great warehouse before mentioned, that faced the street, had, either from age or bad masonry, long before exhib-

ited several cracks. A large segment, bounded by two of these cracks, had been knocked away by a shot, and the superincumbent mass falling in consequence, the great store, and all its hoarded treasures, appeared through the chasm.

The Jew's instincts had, at first, led him to save himself by flight. But, on returning timorously to look after his property, the sight of the ruined wall, and the unprotected hoards on which he had so securely reckoned as the source of wealth, obliterated in his mind, for the time, all sense of personal danger. Seeing a party of soldiers issuing from a wine-house near, he eagerly besought them to assist him in removing his property to a place of safety, promising to reward them largely for their risk and trouble.

One of the soldiers thus applied to was Mr. Bags.

"Ho, ho!" said Mr. Bags; "here's a chance—here's a pleasure, comrades. We can help Mr. Lazaro, who is always so good to us—this here Jewish gentleman, that gives such liberal prices for our things. Certainly—we'll remove 'em all, and not charge him nothing. Oh—oh—ah!" And, to give point to his irony, Mr. Bags distorted his face hideously, and winked upon his friends.

The idea of giving Lazaro any assistance was considered a capital joke, and caused a great deal of mirth as they walked towards the store, to which the Jew eagerly led the way.

"If there's any thing good to eat or drink in the store, we may remove some of it, though it won't be on our backs—eh, boys?" said Bags, as he stepped in advance, over a heap of rubbish, into the store.

"These first—these, my friends," cried the Jew, going up to a row of barrels, standing a little apart from the crowded masses of articles.

"Oh, these first, eh?" said Bags; "they're the best, be they? Thank you, Mr. Lazaro; we'll see what's in 'em;" and, taking up a gimlet that lay near, he proceeded to bore a hole in one of the barrels, desiring a friend, whom he addressed as Tim, to tap the next one.

"Thieves!" screamed the Jew, on witnessing this proceeding, seizing Bags' arm; "leave my store—go out—let my goods alone!" Bags lent him a shove that sent him into a corner, and perceiving liquor flow-

ing from the hole he had drilled, applied his mouth to the orifice.

"Brandy," said he, as he paused for breath; "real Cognac. Comrades, here's look to that 'ere shot that showed us the way in;" and he took another diligent pull at the hole.

Meantime his comrades had not been idle; other barrels were opened, and their contents submitted to a critical inspection.

The Jew tried various modes to induce them to relinquish their booty; first threats—then offers of reward—then cajolery; and, at last, attempted to interpose and thrust them from their spoil. He would probably have experienced rough treatment in addition to the spoliation of his goods, but for other interruption too potent to be disregarded. A shot from the enemy entering the store, enflamed a long line of barrels, scattering the staves and their contents. The place was instantly flooded with liquor—wine, molasses, spirits, and oil, ran in a mingled stream, soaking the debris of biscuit and salt provisions that strewed the floor. One soldier was struck dead, and Mr. Bags only escaped destruction by the lucky accident of having his head at that moment apart from the barrel which had engrossed his attention, and which was knocked to pieces.

The Jew, partly stunned by a wound in the forehead from the splinter of a barrel, and partly in despair at the destruction of his property, came to the entrance of the store, seating himself among the rubbish. Other plunderers speedily followed the example of the marauding soldiers, but he made no attempt to stop them as they walked past him. My grandfather, passing at the time on his way home, was horrified at the sight of him. Flour from a splintered barrel had been scattered over his face, and blood from the wound in his forehead, trickling down, had clotted it on his cheeks and scanty beard, giving him an aspect at once appalling and disgusting. His daughter had waited at the door of the Fives' Court till she saw Owen come forth in safety, and had then availed herself of the protection of the Major as far as her own home. Shrieking at the dismal sight, she sprang forward and threw herself before the Jew, casting her arms around him. This seemed to rouse him. He arose—looked back into the store; and then, as if goaded by the sight of the wreck into intolerable

anguish, he lifted his clenched hands above his head, uttering a sentence of such fearful blasphemy, that a devout Spaniard, who was emerging from the store with some plunder, struck him on the mouth. He never heeded the blow, but continued to rave, till, suddenly overcome by the loss of blood and impotent rage, he dropt senseless on the ground.

My grandfather, calling some soldiers of his regiment who were passing, desired them to convey him to the hospital at the South Barracks, and, again taking the terrified and weeping Esther under his protection, followed to see the unfortunate Jew cared for.

At the various parades that day Mr. Bags was reported absent, being in fact engaged in pursuits of a much more interesting nature than his military duties. A vast field of enterprise was open to him and other adventurous spirits, of which they did not fail to avail themselves, in the quantity of property of all kinds abandoned by the owners, in houses and shops where locks and bolts were no longer a protection; and although the firing, which ceased for an hour or two in the middle of the day, was renewed towards evening, and continued with great fury, the ardor of acquisition by no means abated.

About midnight a sentry on the heights of Rosia (the name given to a portion of the rugged cliffs towards the south and near the hospital) observed, in the gloom, a figure lurking about one of the batteries, and challenged it. Receiving no answer, he threatened to fire, when Bags came forward reluctantly, with a bundle in his hand.

"Hush, Bill," said Bags, on finding the sentry was a personal friend—"don't make a row: it's only me, Bags—Tonga, you know," he added, to insure his recognition.

"What the devil are you doing there, you fool?" asked his friend in a surly tone—"don't you know the picket's after you?"

"I've got some little things here that I want to lay by, where nobody won't see 'em, in case I'm caught," returned Bags. "Don't you take no notice of me, Bill, and I'll be off directly."

"What have ye got?" asked Bill, whose curiosity was awakened by the proceedings of his friend.

"Some little matters that I picked up in the town," returned Bags. "Pity you should be on guard to-day, Bill—there was some pretty pickings. I'll save something for you,

Bill," added Bags, in an unaccountable access of generosity.

The sentry, however, who was a person in every way worthy of the friendship of Mr. Bags, expressed no gratitude for the considerate offer, but began poking at the bundle with his bayonet.

"Hands off, Bill," said Bags; "they won't abear touching."

"Let's see 'em," said Bill.

"Not a bit on it," said Bags; "they ain't aworth looking at."

"Suppose I was to call the sergeant of the guard," said Bill.

"You wouldn't do such a action?" said Bags, in a tone strongly expressive of disgust at such baseness. "No, no, Bill, you ain't that sort of fellow, I'm sure."

"It's my dooty," said the sentry, placing the butt of his musket on the ground, and leaning his elbow on the muzzle. "You see that what you said, Tongs, was very true, about its being hard upon me to be carrying about this here damnable weppin" (slapping the barrel of the musket) "all day for fourpence ha'penny, while you are making your fortin. It is, Tongs, d—d hard."

"Never mind; there'll be plenty left to-morrow," said Bags in a consolatory tone.

"What shall we say, now, if I lets ye hide it?" said Bill, pointing to the bundle. "Half-shares?"

"This ain't like a friend, Bill," returned Tongs, highly disgusted with this ungenerous proposal. "Nobody ever knowed me interfere with a comrade when I was on sentry. How long ago is it since I let ye stay in my box an hour, till ye was sober enough to walk into barracks, when I was sentry at the gate? Why, the whole bundle ain't worth eighteenpence—and I've worked hard for it."

"Half-shares?" reiterated Bill, not melted in the least by the memory of ancient benefits.

"No, by G—!" said Bags in great wrath.

"Serg—," began Bill in an elevated voice, porting his arms at the same time.

"Stop!" said Bags; "don't call the sergeant. Half is better nor nothing, if ye're going to behave like that. We'll say half, then."

"Ah," said Bill, returning to his former position—"I thought we should agree. And now let's see 'em, Tongs."

Muttering still his disapprobation of this

unworthy treatment, Bags put his bundle on the stone embrasure of the battery, and began to unfold it.

Eighteenpence was certainly a low valuation. Bags appeared to have visited a jeweller's shop. Watches, rings, bracelets, gold chains, and brooches glittered on the dingy surface of the handkerchief.

"My eye!" said Bill, unable to repress a low laugh of delight—"why, we'll turn bankers when we've sold 'em. Tongs and Co.—eh?" said Bill with considerable humor.

Bags, however, told him he was altogether mistaken in his estimate—most of the things were pinchbeck, he said, and the stones all glass; and, to save Bill any trouble, he offered to dispose of them himself to the best possible advantage, and bring his partner his share of the proceeds, which would certainly be at least ninepence, and might perhaps be half-a-dollar. This arrangement did not, however, meet the approbation of the astute William, who insisted on dividing the spoils by lot. But here, again there was a slight misunderstanding, for both fixed their affections on a gigantic watch, which never could have been got into any modern pocket, and whose face was ornamented with paintings from the heathen mythology. Both of them supposed, from the size and the brilliancy of the colors, that this must be of immense value. Finding they were not likely to come to a speedy arrangement on this point, they agreed to postpone the division of the spoils till morning.

"I'll tell ye where to put it, Bags," said Bill. "These here guns in this battery haven't been fired for years, nor ain't likely to be, though they loaded 'em the other day. Take out the wad of this one, and put in the bundle."

Bags approved of the idea, withdrew the wad from the muzzle of the gun, put in the bundle as far as his arm would reach, and then replaced the wad.

"Honor bright?" said Bags, preparing to depart.

"Honor bright," returned Bill; and Bags disappeared.

Nevertheless he did not feel sufficient confidence in the brightness of his confederate's integrity to justify his quitting the place and leaving him to his own devices. He thought Bill might perhaps avail himself of his absence to remove the treasure, or be guilty of

some other treachery. He therefore crept back again softly, till he got behind a crag from whence he had a full view of the battery.

For some time Bill walked sternly to and fro on his post. Bags observed, however, that he always included the gun where the deposit lay in his perambulations, which became shorter and shorter. At last he halted close to it, laid down his musket against the parapet, and, approaching the muzzle of the gun, took out the wad.

At this moment a neighboring sentry gave an alarm. The guard turned out, and Bill, hastily replacing the wad, resumed his arms and looked about for the cause of the alarm. About a mile out in the bay several red sparks were visible. As he looked there were a corresponding number of flashes, and then a whistling of shot high overhead told that the guns from which they had been discharged had been laid too high. The Spanish gun-boats were attacking the south.

The drums beat to arms, and in a few minutes the battery was manned with artillerymen. To the inconceivable horror of Bags and Bill, the whole of the guns in the battery were altered in position, and a gunner took post at the rear of each with a lighted port-fire. Then a flushed face might be seen, by the blue light of the portfires, rising from behind a neighboring piece of rock, the eyes staring, the mouth open in agonised expectation.

"Number one—fire!" said the officer in command, to the gunner in rear of the gun in which Mr. Bags had invested his capital.

"No, no!" shouted Bags, rising wildly from behind the rock.

The portfire touched the vent—there was a discharge that seemed to rend Mr. Bags' heartstrings and blow off the roof of his skull—and the clever speculation on which he had counted for making his fortune ended, like many others, in smoke. He gazed for a moment out in the direction of the flash, as if he expected to see the watches and rings gleaming in the air; then he turned and disappeared in the darkness.

After a few ineffectual discharges, the Spaniards seemed to become aware of the badness of their aim, and to take measures to amend it. Several shot struck the hospital; and some shells falling through the roof, exploded in the very wards where the

sick lay. The unhappy Jew, Lazaro, lying in a feverish and semi-delirious state from his former hurt and agitation, was again struck by a splinter of a shell which burst in the ward where the Major's care had seen him deposited, blowing up the ceiling and part of the wall. In the midst of the confusion, the Jew, frantic with terror, rushed unrestrained from the building, followed only by his daughter, who was watching by his bed. He was not missed for some time, and the attempts to discover him, made after his disappearance became known, were of no avail. A neighboring sentry had seen a white figure, followed by another crying after it, dash across the road and disappear in the bushes; but the search made about the vicinity of the spot failed in detecting any traces of them, and those who troubled themselves to think of the matter at all, surmised that they had fallen into the sea.

CHAPTER V.

FOR some pages, my grandfather's notebook is filled with memoranda of singular casualties from the enemy's shot, wonderful escapes, and hasty moments of quietude and attempted comfort snatched "even in the cannon's mouth." The fire from the Spanish batteries shortly reduced the town to ruins, and the gunboats at night precluded all hope of peace and oblivion after the horrors of the day. Dreams, in which these horrors were reproduced, were interrupted by still more frightful nocturnal realities. One of the curious minor evils that my grandfather notices, as resulting from an incessant cannonade, to those not engaged in it actively enough to withdraw their attention from the noise, is the extreme irritation produced by its long continuance, amounting, in persons of nervous and excitable temperament, to positive exasperation.

Some of the numerous incidents he chronicles are also recorded by Drinkwater, especially that of a man who recovered after being almost knocked to pieces by the bursting of a shell. "His head was terribly fractured, his left arm broken in two places, one of his legs shattered, the skin and muscles torn off his right hand, the middle finger broken to pieces and his whole body most severely bruised and marked with gunpowder. He presented so horrid an object to the surgeons, that they had not the smallest hopes of saving his life, and were at a loss what part to attend to

first. He was that evening trepanned; a few days afterwards his leg was amputated, and other wounds and fractures dressed. Being possessed of a most excellent constitution, nature performed wonders in his favor, and in eleven weeks the cure was completely effected. His name," continues Mr. Drinkwater, with what might be deemed irony—if the worthy historian, ever indulged in that figure of rhetoric—"is Donald Ross, and he (*i. e.* the remaining fragment of the said Donald Ross) now enjoys his sovereign's bounty in a pension of ninepence a day for life. One might almost suppose that Mr. Hume had some hand in affixing the gratuity; but in those days there was a king who knew not Joseph.

My grandfather appears to have had also an adventure of his own. During a cessation of the cannonade, he was sitting one morning on a fragment of rock, in the garden behind his quarters, reading his favorite author. The firing suddenly recommenced, and a long-ranged shell, striking the ground at some distance, rolled towards him. He glanced half-absently at the hissing missile; and whether he actually did not for a moment recollect its character, or whether, as was often the case on such occasions, the imminence of the danger paralysed him, he sat immovably watching it as it fizzed within a couple of yards of him. Unquestionably in another three seconds my grandfather's earthly tabernacle would have been resolved into its original atoms, had not the intrepid Carlota (who was standing near gathering flowers to stick in her hair) darted on him, and, seizing him by the arm, dragged him behind a wall. They were scarce under shelter when the shell exploded—the shock laying them both prostrate, though unhurt but for a few bruises—while the stone on which the Major had been sitting was shivered to atoms. To the description of this incident in the Major's journal are appended a pious reflection and a short thanksgiving, which, being entirely of a personal nature, I omit.

The stores landed from the fleet were in a very precarious position. Owing to the destruction of the buildings, there were no means of placing them where they might be sheltered at once from the fire of the enemy and from rain. Some were piled under sails spread out as a sort of roof to protect them, and some, that were not likely to sustain immediate injury from the damp air of such a

depository, were ordered to be conveyed to St. Michael's Cave.

This cave is one of the most curious features of the Rock. Its mouth—an inconsiderable opening in the slope of the mountain—is situated many hundred feet above the sea. Within, it expands into a spacious hall, the roof, invisible in the gloom, supported by thick pillars formed by the petrified droppings of the rock. From this principal cavern numerous smaller ones branch off, leading, by dark, broken, and precipitous passages, to unknown depths. Along one of these, according to tradition, Governor O'Hara advanced farther than ever man had gone before, and left his sword in the inmost recess to be recovered by the next explorer who should be equally adventurous. But whether it is that the tradition is unfounded, or that the weapon has been carried off by some gnome, or that the governor's exploit is as yet unrivalled, the sword has never been brought to light.

For the duty of placing the stores here, the name of Lieutenant Owen appeared in the garrison orders. My grandfather having nothing particular to do, and being anxious to escape as much as possible for a short time from the din of the bombardment, offered to accompany Frank in the execution of this duty.

The day was dark and gloomy, and the steep path slippery from rain, so that the mules bearing the stores toiled with difficulty up the ascent. At first, my grandfather and Owen indulged in cheerful conversation; but shortness of breath soon reduced the Major to monosyllables, and the latter part of the journey was accomplished in silence. Frequently the Major paused and faced about, at once to look at the prospect and to take breath. Far below, on his right, was seen the southern end of the town, consisting partly of a heap of ruins, with here and there a rafter sticking out of the mass, partly of roofless walls, among which was occasionally heard the crashing of shot; but the guns that discharged them, as well as those that replied from the town, were invisible from this point. Directly beneath him the ground afforded a curious spectacle, being covered with tents, huts, and sheds, of all sorts and sizes, where the outcast population of the ruined town obtained a precarious and insufficient shelter. The only building visible which still retained

its former appearance was the convent—the governor's residence—which was protected by bomb-proofs, and where working-parties were constantly engaged in repairing the injuries. The bay, once thickly wooded with masts and dotted with sails, was now blank and cheerless; only the enemy's cruisers were visible, lying under the opposite shore of Spain.

Owen and my grandfather arrived at the mouth of the cave somewhat in advance of the convoy. To their surprise a smoke was issuing from it; and, as they approached nearer, their nostrils were greeted by an odor at once savory and spicy. Going softly up they looked in.

Mr. Bags and a couple of friends were seated round a fire, over which was roasting a small pig, scientifically butchered and deprived of his hair, and hung up by the heels. The fire, in the absence of other fuel (of which there was an extreme scarcity in Gibraltar), was supplied by bundles of cinnamon plundered from the store of some grocer, and, as the flame waxed low, Mr. Bags took a fresh bundle from a heap of that fragrant spice by his side, and laid it on the embers. Mrs. Bags was occupied in basting the pig with lard, which she administered from time to time with an iron ladle.

Presently Mr. Bags tapped on the pig's back with his knife. It sent forth a crisp crackling sound, that made my grandfather's mouth water, and caused Mr. Bags to become impatient.

"Polly," said he, "it's my opinion it's been done these three minutes. I can't wait much longer."

And he cast a glance at the other two soldiers (in whom, as well as in Bags, Owen recognised men of his company who had been reported absent for some days, and were supposed to have gone over to the enemy), to ascertain if their opinions tallied with his own on this point.

"It can't be no better," said one, taking hold of the pig's neck between his finger and thumb, which he afterwards applied to his mouth.

"I can't abear my meat overdone," said the third. "What I say is, let them that likes to wait, wait, and them that wants to begin, begin." So saying, he rose, and was about to attack the ribs of the porker with his knife.

"Do stop a minute—that's a dear," said Mrs. Bags; "another bundle of cinnamon will make it perfect. I'll give ye something to stay your stomach;" and stepping to a nook in the wall of the cavern, where stood a large barrel, she filled a pewter measure, and handed it to the impatient advocate for underdone pork, who took a considerable dram, and passed it to his companions.

"Cinnamon's better with pork nor with most things," said Bags. "It spoils goose, because it don't agree with the inions, and it makes fowls wishy-washy; but it goes excellent with pig."

"What's left in the larder?" asked one of the party.

"There's a week's good eating yet," said Mrs. Bags, "and we *might* make it do ten days or a fortnight."

"Well!" said the other, "they may say what they like about sieges, but this is the jolliest time ever I had."

"It's very well by day," said Bags, "but the nights is cold, and the company of that ghost ain't agreeable—I see'd it again last night."

"Ah!" said his friend, "what was it like, Tongs?"

"Something white," returned Bags in an awful whisper, "with a ghost's eyes. You may allays know a ghost by the eyes. I was just rising up, and thinking about getting a drink, for my coppers were hot, when it comes gliding up from that end of the cave. I spoke to you, and then I couldn't see it no more, because it was varnished."

"Ghosts always varnishes if you speak," said Mrs. Bags. "But never mind the spirit now—let's look after the flesh," added the lady, who possessed a fund of native pleasantry: "the pig's done to a turn."

At this interesting juncture, and just as they were about to fall to, the footsteps of the approaching mules struck on their ears. Owen went to meet the party, and hastily selecting six men from it, advanced, and desired them to secure the astounded convivialists.

On recovering from their first astonishment, Bags begged Owen would overlook the offence; they were only, he pleaded, having a little spree—times had been hard lately. Mrs. Bags, as usual, displayed great eloquence, though not much to the purpose. She seemed to have some idea that an enume-

ration of the gentlemen's families she had lived in, and the high estimation in which she had been held in all, would really tell powerfully in favor of the delinquents, and persevered accordingly, till they were marched off in custody of the escort, when she made a final appeal to my grandfather, as the last gentleman whose family she had lived in—with what advantage to the household the reader knows. The Major, who could not forgive the roasting of his ham, called her, in reply, a "horrible woman," but, at the same time, whispered to Owen that he hoped the fellows would not be severely punished. "If we had caught them after dinner," said he, "I shouldn't have pitied them so much."

"Never mind them," said Owen; "let us proceed to business. We must select the driest spot we can find to put the stores in."

[Here, by way of taking leave of Mr. Bags, I may remark, that he narrowly escaped being hanged as a plunderer—failing which, he was sentenced by a court-martial to receive a number of lashes, which I refrain from specifying, because it would certainly make the hair of a modern humanitarian turn white with horror.]

"Come along," Major, said Owen; "perhaps we may find more of these scoundrels in the course of our researches."

The Major did not move; he was earnestly regarding the carcass of the pig, that steamed hissing above the embers.

"Queer idea that of the cinnamon fire," said he. "I wonder how the meat tastes."

Owen did not hear him, having walked forward.

"Have you got a knife about you, Frank?" said the Major. "Do you know I have a curious desire to ascertain the flavor. It may be a feature in cookery worth knowing."

Owen had not a knife, nor had any of the men, but one of them suggested that the Major's sword would answer the purpose.

"To be sure," said the Major. "A good idea! I don't see why swords shouldn't be turned into carving-knives as well as into pruning-hooks." So saying he drew it from the sheath, and, straddling across the fire, detached a crisp brown mouthful from the pig's ribs, and putting a little salt on it, he conveyed it to his mouth.

"Excellent!" cried the Major. "I give you my word of honor, Owen, 'tis excellent! The cinnamon gives it a sort of a——"

Here a second and larger mouthful interrupted the criticism.

"It must be very near lunch-time," said the Major, pausing, sword in hand, when he had swallowed it; then, pretending to look at his watch—"Bless me, it only wants half-an-hour of it. Do you think this business will take you long, Owen?"

"About a couple of hours," said Owen.

"Ah, why, there you see," returned the Major, "we shan't get home till long past lunch-time. I really don't see why we shouldn't take a snack now. Nothing can be better than that pig. I only wish the woman had dressed my dinner half as well. Corporal Hodson, would you oblige me with a piece of that biscuit near you?" And, detaching a large fragment of pork, he placed it on the biscuit, and sprinkling it with pepper and salt, which condiments had not been forgotten in the gastronomic arrangements of Mr. Bags, he proceeded to follow Owen into the interior of the cave, taking huge bites as he went.

The path slopes at first steeply downward from the mouth to the interior of the cavern, where it becomes more level. Light being admitted only at the entrance, the gloom of the interior is almost impenetrable to the eye. The men had brought torches to assist them in their work, and, a suitable spot having been selected, these were stuck on different points and abutments of the rocky wall, when the party proceeded to unload the mules at the entrance, conveying their burdens into the cave.

In the midst of the bustle and noise attending the operation, the little dog given by Esther to Carlota, which had that morning followed the Major, to whom it had speedily attached itself, began barking and howling dismally in a dark recess behind one of the great natural pillars before spoken of. As the noise continued, intermixed with piteous whinings, one of the men took a torch from the wall, and stepped forward into the darkness, to see what ailed the animal. Presently he cried out that "there was a man there."

My grandfather, who was next him, immediately followed, and five paces brought him to the spot. The soldier who held the torch was stooping, and holding it over a figure that lay on the ground on its back. In the unshaven, blood-stained countenance, my

grandfather, at first, had some difficulty in recognising Lazaro the Jew. Some fiery splashes of pitch from the torch dropping at the moment on his bare throat, produced no movement, though, had he been living, they must have scorched him to the quick.

On the body was nothing but the shirt he wore the night of his flight from the hospital, but his legs were wrapt in a woman's dress. Across his breast, on her face, lay Esther, in her white under-garments—for the gown that wrapt the Jew's legs was hers. The glare of the torch was bright and red on the two prostrate figures, and on the staring appalled countenance of the man who held it—the group forming a glowing spot in the vast, sombre, vaulted space, where dim gleams of light were caught and repeated on projecting masses of rock, more and more faintly, till all was bounded by darkness.

Years afterwards my grandfather would sometimes complain of having been revisited, in dreams of the night, by that ghastly piece of Rembrandt painting.

The rest quickly flocked to the spot, and Esther was lifted and found to breathe, though the Jew was stiff and cold. Some diluted spirit, from the cellar of Bags, being poured down her throat, she revived a little, when my grandfather caused two of the men to bear her carefully to his house; and the body of the Jew, being wrapt in a piece of canvas, was placed on a mule and conveyed to the hospital for interment.

Medical aid restored Esther to consciousness, and she told how they came to be found in the cave.

Her father, on leaving the hospital, had fled by chance, as she thought, to this cave, for he did not reach it by the usual path, but climbed, in his delirious fear, up the face of the rock, and she had followed him as well as she could, keeping his white figure in sight. They had both lain exhausted in the cave till morning, when, finding that her father slept, she was on the point of leaving him to seek assistance. But, unhappily, before she could quit the place, Bags and his associates entered from their plundering expedition into the town, and, frightened at their drunken language, and recognising in Bags the man who had robbed her of her comb, she had crept back to her concealment. The party of marauders never quitted the cavern from the mo-

ment of establishing themselves in it. They spent the day in eating, drinking, singing songs, and sometimes quarrelling. Twice, at night, she ventured forth; but she always found one of them asleep across the entrance, so that she could not pass without waking him, and once one of them started up, and seemed about to pursue her—doubtless Bags, on the occasion when he thought he saw a ghost. Nevertheless, she had mustered courage twice to take some fragments of food that were lying near the fire, leaving each time a piece of money in payment; and she had also taken a lighted candle, the better to ascertain her father's situation. He had never spoken to her since the first night of their coming, and, during all these dark and weary hours (for they were three nights and two days in the cavern), she had remained by him listening to his incoherent mutterings and moans. The candle had showed her that he had lost much blood, from the wound in his forehead breaking out afresh, as well as from the other received in the hospital, though the latter was but a flesh wound. These she had bandaged with shreds of her dress, and had tried to give him some of the nourishment she had procured, but could force nothing on him except some water. Some hours, however—how long she did not know, but it was during the night—before Owen's party found her, the Jew had become sensible. He told her he was dying; and, unconscious of where he was, desired her to fetch a light. This she had procured in the same way as before, lighting the candle at the embers of the fire round which Bags and his friends reposed. Then the Jew, who seemed to imagine himself still in the hospital, bid her say whom, among those she knew in Gibraltar, she would wish to have charge of her when he was no more; and, on her mentioning Carlota, had desired her to take pen and paper and write his will as he should dictate it. Pen she had none, but she had a pencil and a scrap of paper in her pocket, and with these she wrote, leaning over to catch the whispered syllables that he with difficulty articulated.

From this paper it would appear that the Jew had some fatherly feelings for Esther concealed beneath his harsh deportment towards her. I can describe the will, for I have often seen it. It is written on a piece of

crumpled writing-paper, about the size of a bank-note, very stained and dirty. It is written in Spanish; and in it the Jew entreats "the Señora, the wife of Sr. Don Flinder, English officer, to take charge of his orphan child, in requital whereof he leaves her the half of whatsoever property he dies possessed of, the other half to be disposed of for the benefit of his daughter." Then follows a second paragraph, inserted at Esther's own desire, to the effect that, should she not survive, the whole was to be inherited by the aforesaid Señora. It is dated "Abril 1781," and signed in a faint, straggling hand, quite different from the clear writing of the rest—"JOSE LAZARO."

Esther would now have gone, at all hazards, to obtain assistance, but the Jew clutched her arm, and would not permit her to quit him. He breathed his last shortly after, and Esther remembered nothing more till she came to herself in the Major's house. The paper was found in her bosom.

Some days after this event, my grandfather went with Owen into the town, during a temporary lull in the enemy's firing, to visit the house of Lazaro, in order to ascertain whether any thing valuable was left that might be converted to Esther's benefit. They had some difficulty in finding the exact locality, owing to the utter destruction of all the landmarks. The place was a mass of ruins. Some provisions and goods had been left by the plunderers, but so mixed with rubbish, and overflowed with the contents of the casks of liquor and molasses, as to be of no value even in these times of dearth.

Owen, poking about among the wreck, observed an open space in the middle of one of the shattered walls, as if something had been built into it. With the assistance of my grandfather's cane, he succeeded in dislodging the surrounding masonry, already loosened by shot, and they discovered it to be a recess made in the thickness of the wall, and closed by a small iron door. At the bottom was lying a small box, also of iron, which they raised, not without difficulty, for its weight was extraordinary in proportion to its

dimensions. This being conveyed to my grandfather's, and opened, was found to contain more than six hundred doubloons (a sum in value about two thousand pounds), and many bills of exchange and promissory notes, mostly those of officers. The latest was that of Von Dessel. These the Major, by Esther's desire, returned to the persons whose signatures they bore.

Esther never completely recovered from the effects of her sojourn in the cave, but remained always pale and of weak health. My grandfather took good care of her inheritance for her, and on leaving Gibraltar, at the conclusion of the siege, invested the whole of it safely for her benefit, placing her, at the same time, in the family of some respectable persons of her own religion. She afterwards married a wealthy Hebrew; and, in whatever part of the world the Major chanced to be serving, so long as she lived, valuable presents would constantly arrive from Gibraltar—mantillas and ornaments of jewelry for Carlota, and butts of delicious sherry for my grandfather. These, however, ceased with her death, about twenty years afterwards.

This is, I believe, the most connected and interesting episode to be found in the Major's note-book; and it is, I think, the last specimen I shall offer of these new "Tales of my Grandfather."

As a child I used to listen, with interest ever new, to the tale of the young Jewess, which the narrator had often heard from the lips of Carlota and her husband. St Michael's cave took rank in my mind with those other subterranean abodes where Cassim, the brother of Ali Baba, who forgot the words "*Open Sesame*," was murdered by the Forty Thieves; where Aladdin was shut by the magician in the enchanted garden; and where Robinson Crusoe discovered the dying he-goat. And when, at the conclusion of the tale, the scrap of paper containing the Jew's will was produced from a certain desk, and carefully unfolded, I seemed to be connected by some awful and mysterious link with these departed actors in the scenes I had so breathlessly listened to.

From The Independent.
RAPHAEL'S HOURS OF THE NIGHT.

BY MRS. HARRIET BEECHER STOWE.

THESE exquisite little designs are the fresco ornaments of a pavilion near Rome, and now are nearly obliterated. They are evidently conceived in the spirit of the graceful flying figures in the Pompeian frescoes, but breathe the chaster influence of Christian art. They are exquisitely poetical and fanciful.

Hours of the night!—upon my chamber walls
 Hung dreamy figures hovering in mid air,
 Begot by Raphael when the antique art
 He wedded with the bridal ring of Christ.
 Sweet Raphael—fairest of the sons of men,
 Whose thoughts were visible music, whose accord

Died not when died its master, but lives on,
 Charming the eye and thought of lands unknown.

Hours of the night! how dreamily they move!
 One from her vase pours down the cloudy dew—
 One hovering with veiled brow and wavering robe

Seems bearer of calm dreams like floating clouds—

Flying, yet still—and as I gaze, my brain
 Grows tremulous and seems to float and dream,
 And as I dream thus flows the tide of song:

Hours of the night, forever there unfolding
 Your purple shady robes, heavy and still.
 Pass, pass ye on, while we your course, behold—
 ing,

Wait for the morning which pursues you still.

Hours of the night! to *him* forever passed?

For he hath gone into God's perfect day!

Where the ideal is mystery no more;

Where doubt and error flee with night away!

Hours of the night! ye have your pleasant dreams,

Your falling dews, with silvery doubtful gleam;

But pass ye on, and rise the perfect day

When all shall stand revealed in morning's beam!

For all that painters, all that poets dream,

Are but the dew-drops of life's fleeting night
 That shine on tree and flower, but cannot guide,
 While grope we on, in the imperfect light.

He is the Morning Star, that Son of God,

Whom Raphael saw transfigured in the sky—
 That glorious dream was given to *his* night hours
 To be for *ours* perpetual legacy;—

He saw and died—the morning star had risen—
 The fleeting night brought in th' immortal day,

And as a dew-drop spreads its rainbow wing;
 The artist's soul exhaled in light away.*

* The Transfiguration, the last work of Raphael, of which the sublime head of Christ is, perhaps, the nearest to the inapproachable idea of Christian art of all attempts which have been made.

Ah, these night hours, O Saviour, grant us power

To pass them bravely, waiting, till we see
 Thee rising in the east, before whose face
 All night, all sorrow, shall forever flee.
Andover, Aug. 30.

A MORNING PRAYER.

Those streaks upon the wall

Denote another day.

Oh, that to me might fall

No sin this day.

I cannot hope, oh Lord,

That thing to say

When conscience shall recall,

But still may humbly pray

Thy pity, Lord,

And not thy sword,

Attend my erring way.

Not for this sinful self alone,

Oh Lord, my prayer.

In thy dear loving kindness hold

She whom Thou gavest me, to be

The dear consoler of my life,

My tender and beloved wife,

And all the precious fold

Whom Thou hast trusted to our care:

Those "Little Ones,"

Of whom Thou spak'st, oh Lord,

Of whom Thou spak'st the gracious Word

To bring them unto Thee.

Father! for these and all Thy sons,

For all Thy children of the earth—

Poor, weak, forlorn—

Thy bounteous grace and pity give

Whilst still below we live;

And, in the resurrection morn,

Glad triumph in immortal birth.

Granada, (Nicaragua), October 28, 1857.

FRAGMENTS OF SONG.

LISTEN, Brother, listen!

Hearst thou not the sound

Of his footsteps on the ground,

Coming up the fir-tree walk?

Oh listen, listen!

Say not 'tis the ivy-stalk,

Beating against the window-pane;

Or the dead leaves whirling round,

Eddying in a broken chain—

Listen, listen!

Again! oh listen, Brother dear!

A voice of one in grief and pain

Seemeth to call on me in vain—

Calling on me, to hear—

Brother dear!

Is it the bitter wind

Complaining to its kind,

As it howls across the waste?

That is all—no need of haste

To ope the door—

No one is there!

Woe is me!

No one is there,

No one there!

—Mrs. Rathbone.

From The Spectator,
THE PROGRESS OF RUSSIA CONTINUED.

THE Crimean war has evidently forced upon Russia a change of tactics. We have long suspected that it had not compelled her to abandon the objects at which she was aiming, whether through Nesselrode, or Menschikoff, or Gortschakoff, and the result of recent events inclines us to anticipate that she may probably attain her objects, war, defeat, and conferences notwithstanding. Amongst the Governments of Europe, Russia is that one which at the present day most systematically and consistently aims at carrying out particular objects by a persevering policy. Austria has inherited a policy which she has been compelled to accommodate to altered circumstances; Metternich belongs to the past, Schwarzenberg has disappeared, while the Buols, Bachs, and Leo Thuns appear to vacillate in their expediences, as if the chain of intellectual connexion with Metternichism had been cut off by the brief and calamitous, but significant intervention of Stadion. We have not yet any reason to suppose that official "Prussia" has abandoned the neutral position that she assumed. Official "France" is a recent combination, and we have not yet been able to arrive at a thorough comprehension of the principles by which she is guided. And our own Government, which may have a permanent policy amongst the secrets of its Foreign Office, is compelled to trim at present between diplomatic freemasonries and a deference for popular and constitutional opinion at home. It is Russia alone who is in complete accord with herself,—is able notwithstanding the change of external circumstances to stick to the text of her testamentary policy, to be consistent in her aim, notwithstanding her change of position, or the shifting of winds in the political atmosphere. The nation which perseveres in its own purposes through fair weather and foul is likely to obtain the greatest share of success in the end; and thus, with all our boasted power and resources,—half of our national strength being frustrated by the systematic double-dealings of the day,—we are beaten in council when we have to confront the "semi-barbarous" power.

It is perhaps premature to accept all the reports that have been circulated of the proceedings at the Paris Conferences; we must take what we are told *cum grano*; but it is more than probable that the *Constitutionnel* has enjoyed a very intelligible kind of patronage in the acquirement of its information, and circumstances, as well as other accounts, tend to corroborate its assertions. One report is indeed most remarkable, and is only explained by the general observations which we have just made. It is said that Lord Cowley

sought to obtain, from the assembled representatives of the European powers, a personal pledge that the proceedings of the Conferences should be kept secret even after the exchange of the ratifications; and while Sardinia "as a Constitutional State" protested against such a proposal, the strongest resistance came from Russia, who challenged publicity! It is said that Lord Cowley evinced a peculiar anxiety to avoid a publication of the reasons as well as the conclusions of the plenipotentiaries; as though the representative of Lord Palmerston and Lord Malmesbury dreaded comparisons with our own parliamentary debates, or a summons before the public opinion of his country. If there is any truth whatever in these reports, Russia has not only gained the largest proportion of the winnings at the card-table of the Conferences, but has kept up appearances much better than the representative of virtuous England.

In order to estimate the amount of the Russian victory in substantial, let us remember how the question came before the Conference, and let us look at the constitution which is said to have been drafted for the Danubian principalities. It was known some time since that Russia desired the union of these two provinces, while Turkey desired their severance; the very intelligible reason being, that if Russia favored the Rouman desire for local consolidation, she would be able to work upon the quasi-independent provinces, and win them over to annexation with her own empire. France was supposed to have been won over to the Russian view while England resisted it; Prussia being indifferent, Austria disliking Russian aggrandisement, and Sardinia rather sympathising with the Czar, who had shown greater magnanimity towards the kingdom of Northern Italy than her somewhat ungrateful allies in the Crimea. This was the position of affairs when the Emperor Napoleon visited Osborne for the purpose of being brought over by our Queen; and it is said, he was brought over.

In the Conference accordingly, France has stood by England in claiming a certain degree of severance for the principalities, which are not united; and yet, in the compromise which has taken place, it is not to be denied that Russia has gained nine tenths of her wish. Moldavia is to stand separate from the sister province, having its own hospodar, its elected house of representatives, and its body of electors. The boyards or country gentlemen, who are supposed to be the depository of the Russian sympathies, and who enjoyed a monopoly of the franchise, are thus superseded in their political importance. If the Hospodar, Deputies, and electors, are all to be persons whose social station shall be marked by some kind of property qualification

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perhaps they will not be the less independent on that account. Wallachia will have a constitution the exact counterpart of the Moldavian; but these separate and independent provinces are to possess in common a Senate, and some kind of high judicial tribunal; so that a portion of the legislature and of the judicature, of the law-making and the law-executing, will be common to both provinces. Both will lie under the suzerainty of Turkey in questions of peace or war, and the Porte is suspected of aims at restoring some portion of her supremacy by replacing her creatures in the executive. A minimum therefore of influence, and that none of the best, is left to Turkey. The concession made to the Western Powers is the separate administration of the principalities in local affairs; while Russia obtains such a degree of consolidation as may easily be rendered the means of bringing about a much more substantial and thorough consolidation.

It is probable indeed, that this degree of Russian success will not be followed up by so much encroachment in the spirit of wilful trespass as we have seen that power carrying on heretofore. * Many recent events have thrown much light on the impolicy of past Russian policy; and other events have rendered it probable that the reigning Emperor has at last been impressed by the leading lesson which should be derived from what we might call the education of his dynasty through successive generations. The Russian Government struck out a plan of completing its administrative control over the whole empire, with a better military presence in the south, by a grand system of railways, connecting all the ports on the Baltic, the Neva, the White Sea, the Sea of Azof, and the Black Sea, with the two capitals of Russia, with the imperial residences, the off-lying provinces of Poland, and the principal lines of Germany through Prussia. Here was all that was wanting to make the Imperial Chancery omnipresent; but there was a slight obstacle: the sum required was forty-four millions sterling, and on the very first movement it was seen that such a sum could only be raised by the usual commercial means. The company formed for the purpose, indeed, has not been able to secure the cash except by instalments in rather a tedious way; it is now seeking a loan of six million and a half on debentures, to make up the first amount of twelve millions which ought to have been raised on shares. And in order to render the raising of such sums even probable, the directors of the Grand Russian Railway Company are obliged to modify the Imperial plan by diverting the lines, where they can be carried round through populous districts; by beginning, and for a time proceeding, only

in patches where the commencements of the lines can obtain a self-supporting local traffic; and at the best leaving the grand imperial, military scheme only a dream of the future. The circumstances of the age, indeed, are making Russia identify herself and her action with those interests and counsels which are not warlike, aggressive, or dangerous, at least in the old political sense; and she has shown a certain willingness in thus adapting herself. It is through the imperial influence that the emancipation, long since begun with the serfs of the crown, has been enforced upon the serfs of the private nobles; and while Russia must view with much jealousy the advance of the Western Powers into China, where geography appeared to have given her almost a monopoly of encroachment, she makes a merit of necessity and becomes the medium of announcing the success of the Western Plenipotentiaries through her own special channels at St. Petersburg. Our Foreign Office is charmed at the courtesy, as the Yankees are overjoyed at the magnanimity of the serf-emancipation. Does it follow that Russia is abandoning her objects because she is improving her policy? The very fact that she has outstripped our fastest ships and our telegraphs in announcing an important piece of intelligence shows the forwardness of her organization in the extreme East. The fact that her railways are proceeding, ten years being but a ten minutes in the chronology of Russian perseverance, is a promise that the imperial scheme will sooner or later be realised; while her failures in the Menschikoff demands and in the Crimean war, turned to account in her improved tactics, and followed by the success of her appeals to European opinions and the attainment of so much Danubian consolidation through the Paris Conference itself, prove that if she has failed through too mechanical an obedience to Peter the Great's advice, she knows how to carry out the spirit of his injunctions, and to move towards her unabandoned objects by safer, wiser, and even more magnificent routes.

From The Spectator.

AN IMPERIAL PITCHFORK.

THE Emperor of the French is endeavoring to create that kind of organization which would constitute perfect national unity. Napoleon is the motive brain, the French nation the body, the public offices the limbs. In this sense every person administering to any function of the entire body is a public administrator: the tradesman is a purveyor, as he sometimes politely calls himself here; the theatre is a department; and music is the subject of a special commission. For it is no doubt in this comprehensive view of his duties that the Emperor Napoleon has just issued a

commission to ascertain the possibility of fixing upon a "uniform diapason" or pitch. The commission which is admirably formed, includes amongst its members Rossini. The object is one which has often been desiderated, but has not yet been attained, if even any progress has been made towards it. For want of such a fixed standard, there is not only a constant confusion between the instruments of the same country, but there has been a progressive change in the pitch of instruments and of vocal composition, within the last century especially. Many of the vocal works of Handel and his contemporaries are now difficult to sing from, being "too high." The causes of this perpetual elevation of the pitch are tolerably well known, though they are not absolutely clear.

One may reside in the tendency of the musical scale itself, as it is formed from the base, to extend the intervals upwards; inasmuch that the higher notes become "too sharp," and in the process of temperament are reduced to bring them into their general relations with each other. This confusion of the scale as it is formed amongst European nations—and Heaven defend us from adopting the Syriac or Chinese scale—is one amongst the millions of examples of that eccentricity in the mechanism of nature which forbids human systematizing. We cannot reduce nature to our narrow idea of "perfection."

It is however probable, that the progression of the pitch is principally due to a moral cause. The composer desires to make his work "brilliant;" he throws it rather high in the scale. The performer desires to produce a "brilliant" execution, and he tunes his instrument rather sharp. The audacious singer dares the instrumentalist to go as far as he can in that direction; and thus in the ambition of brilliancy, the singer, the instrumental performer, and the composer are constantly working upwards. "Concert pitch" is a phrase colloquially employed to mean a pitch higher than that which is considered generally desirable for instruments in our day.

To correct this tendency to aberration natural standards have been suggested. Instrumental tuners will produce their own "pitchforks" as a sufficient standard; the pitchfork itself however, having progressively advanced, though somewhat in the rear of executed music; and the older pitchforks are flatter in tone than the modern.

The song of birds has sometimes been pointed out as a natural standard, but amongst the difficulties of employing it is that of reducing the note sounded by a bird to any part of our scale. Gardiner, no doubt, employs musical notes to imitate the natural tune of birds; but how different would those

notes sound on the pianoforte, or even on the most beautiful violin, from that sharp delicate chirp of the bird which eludes systematized reductions to our larger and more precisely divided gamut. We must seek the standard among ourselves.

Amongst all the nations of the earth, although they are not the most musical, the French perhaps are the very best to assist us in this particular search, especially with the aid of the great master of music, Rossini. The object would be attained, if we could fix upon a piece of metal, with a given standard of purity—not silver, which proves to be one of the least sonorous of metals—and with an ascertained weight and dimensions. But, as Sir Robert Peel said, "What is a 'pound'?" The standard of weight and measure itself has varied, and still varies amongst us, English. "A pound" is equivalent to a pint of water, or nearly so; but what is a "pint" of water? What is a "foot" measure? The length of a man's foot,—which varies, without any monstrosity, from nine to thirteen inches; as a "barley corn" varies with every grain in a field of barley. It was the French who first systematically based measurements upon a natural standard, in deputing Humboldt and the companion whom that philosopher has just lost, Bonpland, to measure a degree at the equator by a scientific process. Here probably is the nearest approach to a natural standard, corrected by large data, that human science can attain. Upon that datum the French have based their systematic measurement; they are a systematic people, and we see them more hopefully than any other, engage in the present enterprise.

The consequences are likely to be important, even for the higher branches of music itself; nay, even to composition. The same mania for "brilliancy" which has beset the performer has attended the composer, and it has been uncorrected by the knowledge of any thing like an accurate standard. It is possible that in a country like France a gracious Emperor, strengthened by a sufficient reverence for music, might place restraints upon aberrant composers, and keep the wilder sort within something like bounds of decency. The great master who is in the present commission, although he has been copious in music which unpractised singers account difficult, is conspicuous for producing the largest amount of effect through each peculiar kind of voice for which the music is destined. In this sense, he is a composer whose works are easy to sing, though powerful and brilliant in their result; and it is because there have been few musicians who have evinced so keen a sense of the natural scale. A permanent imperial commission such as we have imagined to control the excesses of musicians, especially

of composers, would prevent a Verdi from giving to the world those shouting orations which are very impressive, for the hour, but do more than any thing to break down voices. He has revived the manner of that French singer and teacher Adrien, whose destructive method of exaggerated effort is deprecated by the accomplished Fétis.

"The emission of the sound never being made in a natural manner and the strength of the lungs being constantly exerted, the most robust voices were unable to resist the fatigue of a labor for which the Herculean strength of Adrien had been insufficient. Thus, for several years, voices which were free and of good quality, and which had not been procured without much difficulty, were destroyed before they were able to leave the Royal School of Music."

Singers for Verdi's operas should have been taught in this manner, and they would last, as he permits singers to do, for two or three years.

But a permanent commission of music might exercise other useful checks upon abuse. In civilized countries commerce is the handmaid of music, as it is of most services in general demand; and even in music commerce cannot refrain from its adulterations or suppressions. We suspect an instance of this kind under which the public of our own country suffers, although unconscious of its privation. No instrument has hitherto been found so available for general use as the pianoforte; which has assisted in carrying the finest music into every home of the country. It has its imperfections, and the principal is the incapacity of the machinery to give forth a continuous sound. To amend this defect has been one of the problems of practical music. Various efforts have been made, and a good many years since, the plan invented by a working pianoforte-maker appeared to promise success. The man had the same name with an eminent Roman composer, Isouard; but we doubt whether there was any relationship, or even whether they were of the same country. The plan consisted in throwing a stream of air upon a string after it had been once vibrated by the percussion of the hammer. Another method of obtaining continuity in keyed instruments is exemplified by the "hurdy-gurdy," in which the string is vibrated by a circular bow, though not with the happiest effects. A very simple and ingenious application of the same principle, however, was exhibited in this country a very few years back. We heard the instrument, though we had not an opportunity of seeing the mechanism. It consisted, we believe, of a silken cylinder, moving not transversely to the string, but longitudinally—parallel to the extension of the string itself. The effect was

exceedingly sweet, adding to the brilliancy of the pianoforte the plaintive drawn-out sound of the violin, with a power of continuity *ad libitum*, and of *crescendo*; though it still wanted of course that crowning beauty of the bow instrument, the power of giving accurate intonation to the leading notes. This perfection of a pianoforte, we believe, was publicly exhibited only once, at St. Martin's Hall, before a very small audience; once again, privately, before the Queen; and then, with its inventor and exhibitor, a M. Kaufman, it disappeared into space, and was never heard of again. Had envious pianoforte-makers assassinated M. Kaufman, that unpretending white-haired elderly gentleman, who was so proud of his invention? The police have never reported such a crime, but we have before us the obvious fact, that if the invention had been successful, it would at once have thrown out of use all existing pianofortes, unless they had been adapted, and would immediately have lowered in value, by 50 per cent or more, all existing stock, representing no doubt, some hundreds of thousands of pounds sterling. A permanent commission, such as that of the Emperor Napoleon, would have fixed Kaufman with us for the time, and would have exhausted experiments to ascertain the value of his invention; but could not M. Rossini and his colleagues rediscover for us the lost Kaufman?

From The Saturday Review.

THE PEACE WITH CHINA.

THE allusion, in the announcement of the treaty between China and Russia, to a previous conclusion of peace with England and France, is perhaps more trustworthy than if it had been a positive statement. After the entrance of the allied squadron into the Peiho, there was little doubt that European firmness would soon prevail over the ingenious versatility of Chinese diplomacy. It is true that joint negotiations are not in general satisfactorily carried out, nor had our French auxiliaries displayed any extraordinary zeal during the recent operations. The plenipotentiaries of the belligerent Powers were also embarrassed by the company of neutral colleagues—of a Russian who might be suspected of a desire to promote separate interests, and of an American whose instructions may probably not have enjoined a scrupulous regard for the wishes of England. It is, however, only fair to admit that Count Putiatin, himself a distinguished naval officer, has exhibited a friendly feeling to the leaders of the expedition, and all the assembled diplomatists must have felt that they would be held responsible for failure in the obvious purpose of their mission. Lord Elgin has shown a commendable desire to obtain his object without any unnecessary

effusion of blood, but the destruction of the Peiho forts, and the subsequent advance to Tientsin, were probably indispensable conditions of the concessions which were required at Peking. Chinese politics, though they are still imperfectly understood, present some intelligible and uniform characteristics, and European diplomatists may envy the patient pertinacity, the timely submission to necessity, and the convenient exemption from conventional susceptibilities which belong to Celestial dignitaries. It would probably be more correct to say that the point of honor is peculiarly placed in the Chinese system of public morals, than that it is altogether wanting. The Imperial Court accepts defeat or menace as ascertained facts, which may lead by a natural consequence to the adoption of unpalatable measures; but there is no disposition to anticipate the success of an adversary when it is certain that his enmity may at the worst be brought off at a known and definite price. Lord Elgin and his colleagues were not dealers in Sibylline books, to be acquired by a progressive increase of sacrifices. Even if the war had lasted for ten years, China was safe from European conquest, and at the conclusion of hostilities the barbarians would be eager to exchange broadcloth and opium for silk and tea. The contest would probably have been allowed to linger indefinitely if it could have been prolonged in the distant provinces of the Empire; and even when the squadron appeared at the mouth of the Peiho, it was by no means certain that the invaders would venture to advance on the capital. If any Chinese engineer had sounded the water on the bar, and gauged the draught of the English steamers, he might reasonably have recommended his superiors to delay their submission until the vessels had passed an obstacle which might well have been thought insurmountable. The French officers were anxious to reserve themselves for duties which demanded their attention elsewhere, and for a time it was not known whether the English Admiral had made up his mind to advance. It was not until it became certain that the Plenipotentiaries might wait indefinitely for the Commissioners from Peking, that Sir M. Seymour finally determined to accelerate their progress by meeting them half-way.

There have been many more desperate enterprises recorded in the naval history of England than the advance up the Peiho, but the ready and available resources of genuine sailors have seldom been more conspicuously displayed. The *Nimrod* and *Cormorant* ran at the bar like horses at a difficult fence, and at the first attempt both vessels stuck fast in the mud, as their captains had fully anticipated. It is highly probable that Captain

Dew and Captain Saumarez had never read the history of a Norse sea-king who escaped from a beleaguered harbor in the East by tilting his galley alternately at the stem and stern, so as actually to leap over the boom which the enemy had placed to intercept his progress; but the feat which was performed a thousand years ago with an open boat of pine wood, was repeated at the mouth of the Peiho in large English vessels with all their armament on board. While the engines worked, and backed, and went on, weights and guns were shifted alternately fore and aft, and two hundred men running up and down the decks made their ship, instead of walking the waters, travel slowly across a mile of sand. At the last moment at which the tide would serve, the *Nimrod* slipped off into deep water, and the larger ships, with the English and French gunboats around them, were ready for action with the forts. The result of the contest could not be doubtful, though the Chinese garrison stood manfully to their guns, and it is probable that the entrance of the squadron into the river practically decided the policy of the Imperial Government. A Tartar leader, who rejoiced in the title of "the demon," had occupied Tientsin with a force of 30,000 men described as "tigers of war;" but when the squadron with the Ambassadors on board ascended the river after some delay, they found residences prepared for them, and the population on the banks crowded to welcome them, striking their heads on the ground in token of respect and submission. The merchants sent deputations to inquire what cargoes had been brought in the ships, forwarding at the same time lists of the goods which they were prepared to offer in return. At the date of the last detailed accounts, Lord Elgin had sent for a reinforcement from Hong Kong; but it seems that the conclusion of the treaty must have been effected before his arrival at Peking.

During the whole course of the recent transactions, additional proof has been afforded that the habits and institutions of China, and the inclinations of the people, offer no obstacle to the most unrestricted intercourse with foreigners. If the terms of peace are correctly reported, the Government is about to remove or suspend some of the obstacles which have thus far interfered with commercial freedom. It is doubtful whether the ports which are said to be open are only those which were secured for the purposes of trade under the previous treaty; but a considerable advance seems to have been made in the provision for the appointment of consuls, and in the recognition of the right to send diplomatic agents direct to the capital. According to the precedent of the former treaty, the defeated enemy will defray the

whole or a considerable part of the expenses of the war. If submission had been delayed, some more convenient settlement would probably have been demanded for this country, in place of the little island of Hong Kong; but it might have been difficult to obtain the co-operation of the allies in any attempt to procure an exclusive benefit for England. On the whole, there is reason to hope that some commercial advantages may be derived from a fresh admission on the part of China that foreign trade is legitimate or beneficial. The greater portion of the profit which may result will fall to the share of England and the United States, for it is difficult to suppose that the maritime commerce between Russia and China can attain any considerable dimensions. It is certainly not impossible that the treaty may hereafter serve as an excuse for Russian encroachments on the north-western frontier of the Chinese Empire; but the jealousy even of amateur diplomatists must be content to remain without satisfaction when there is a question of the independence of Tartary, or of the inviolability of the Great Wall.

From The Examiner 28 Aug.
COUNT PERSIGNY ON THE EMPIRE AND ALLIANCE.

WE offered some remarks not long since on the great importance to the people of France, especially as they are governed at present, of those departmental institutions called Councils-General. Privileges of speech, like other things, rise in value in the ratio of their rarity. The few last shreds of freedom are of the same priceless worth to a nation that the last plank is to the shipwrecked mariner. Few and faint indeed are the vestiges left in France of the "true liberty" which only exists, according to Euripides,

"When freeborn men

Having to advise the public, may speak free."

The Council-General is one of these precious relics. In these bodies there is still a throb of life remaining, still an opportunity of speech left, and in proportion to the restraints under which they speak and move, is our interest in their transactions, is the significance to be attached to the voices issuing from them.

The speech made by Count Persigny at Saint Etienne, on the occasion of opening, as President, the Council-General of the Loire, contains much that is worthy of note, and much to be read with satisfaction, though mixed, as is only natural, with much to which no Englishman could assent. But even where we are forced to disagree with the speaker's opinions and principles, and where he discusses the imperial system, and justifies its rigors on the grounds of political necessity, we are glad to see those opinions publicly

stated; it is something to have questions like these argued on a high stage by a man of Count Persigny's political and social eminence. Discussion, to be sure, with only one party to it, is a very different thing from controversy. French discussion resembles the moon of which we are only acquainted with one side. This, however, is the inevitable consequence, as it is the express object, of the laws and institutions for which the Count took upon himself the hard task of apologizing. We have therefore only to be thankful for the apology itself. It is something, nay, it is much, to see it thus publicly acknowledged that the despotism that presses so heavily upon France is a system which requires justification. France, it is thus happily proved, is far enough, even in her present bondage, from being sunk to what the poet describes as the lowest point of moral degeneracy, when men have lost the faculty to

"perceive their foul disfigurement,
But think themselves more comely than before."

Count Persigny perceives the disfigurement of his country; he is not charmed by her political deformities; he does not mistake them for comeliness. He confesses them to be evils, and only justifies them as evils of necessity, and conditions of better days to come. The tyranny that thus places itself at the bar of public opinion, and defends itself aloud, even though none dare rise to answer its arguments, is removed by a wide interval from the most malignant forms of misgovernment. The encouragement to be drawn from the oration at Saint Etienne is the more encouraging, when we recollect the speaker's intimate connection with the Emperor, and that it is in fact Louis Napoleon himself who speaks and apologizes through the lips of his friend. "It is true," he says, among other things to the same effect, and in the same tone of homage to principle, "that the liberty of the press, which either vivifies or kills all other liberties, is *very materially modified* by the system of warnings." And again, "No one can regret more than I do myself that, owing to the present system, the influence of the press upon public opinion is insufficient to enlighten the Government, or to prevent private interests, under the masks of public interests, from taking the Emperor's name in vain."

Sounds not this very like an acknowledgment that the press of France wears heavier chains than is consistent with the public welfare, according to the most imperial view of it, and even assumed to be identical with the interests of the reigning dynasty? Count Persigny describes the government of his country as floundering in obscurity, without a single free organ of opinion to illuminate and

guide it. The true "lantern to the feet" of statesmen is wanting in France by the admission of one of the foremost men in her councils. Can it be for the interests of the Bonaparte dynasty itself that this Cimmerian darkness should continue? The press of France in the days of its liberty may have shown itself at times the adversary of rational freedom, but let her present sovereign consider whether its utter extinction may not be equally dangerous to himself and his system. The navigation being betwixt Charybdis and Scylla, the Emperor seems to be steering right for the rock, because the few governments before him perished, he fancies, in the whirlpool.

But on the subject of the relations of France with this country, we have not only no fault to find with any thing that fell from Count Persigny, but it is our agreeable duty to record his observations as satisfactory in the highest degree, and well calculated to render still stronger the ties that are happily so strong already.

"Nevertheless, a cloud which might have proved dangerous, lately obscured our relations with a country whose alliance with ourselves had been so happily cemented and so fruitful, and it has required nothing less than the wisdom and reciprocal friendship of the two sovereigns to prevent a coolness between the two powers. Happily, as the Emperor said at Cherbourg, if it was wished to revive the rancors and passions of another epoch, the attempt would be defeated by the good sense of the public. In fact, messieurs, the interests of the two peoples are now so closely interwoven that it would be difficult for even the most furious passions to bring to pass an entire rupture. Such is this solidarity of interests, that if to-morrow London or Paris were burnt, we should each suffer immense commercial losses, and while a catastrophe falling upon Berlin, Vienna, or St. Petersburg, would excite only our sentiments of pity, were it London we should be wounded in our interests almost as seriously as at Paris itself. Now, when two peoples have arrived at this point, they are evidently destined to draw together more closely every day their present union."

We might indeed wish that so much stress had not been placed upon the influence of the courts, however intimate, in maintaining the harmony of two such nations; but letting this pass, the truth of these words is not more undeniable than the good spirit with which the occasion was seized for proclaiming it. And it is further to be noted that no passage of the Count's speech was better received, cries of "très-bien, très-bien," expressing the cordial concurrence of the audience. The

Count went on to demonstrate the inestimable advantages resulting respectively to France and England from their friendship. He showed that neither has the slightest interest in war, while both have enormous stakes in the continuance of peace. The following words, recognizing the naval greatness of England as a positive benefit to France, and quietly censuring the backwardness of his countrymen to follow us in the career of free trade, are particularly worthy of attention and record.

"With England we are masters of the seas, and consequently have nothing to fear upon our frontiers. No coalition against us is possible; general peace is assured. Our country can give itself up to all the developments of its activity without any pre-occupation, and complete the work of establishing its institutions without incurring any risk. Elsewhere, we have no material rivalry with England, since she has opened to our commerce as to her own the access to her immense colonies; it is not her fault if continuing our system of production at high prices, we do not know how to profit by it."

It was natural for Count Persigny after such statements to put the question, "how, such being the reciprocal interests and dispositions of the two nations, are the unpleasant occurrences that followed the *attentat* to be accounted for?" The Count's answer to the self-proposed inquiry not only does justice to the feelings of this country, but shows Count Persigny to be a man who understands and appreciates the working of our free institutions.

"By the commonest of all explanations—by a series of misunderstandings which arose on both sides of the Channel. Already since the peace, public opinion in England had taken umbrage at some diplomatic incidents, but at the news of the attempt of the 14th, England was unanimous in stigmatising the odious crime. At that period the true English public—that public which, in reality, directs and governs the state—which is accustomed to see order proceed from the greatest agitations, to disdain all the excesses of the press, to take no heed of any of the exaggerations of liberty—the English public, I say, knew nothing either of the previous attempts organised in England against the Emperor, nor of the doctrines professed by a portion of the refugees; it was, in all sincerity, as ignorant of those infamies as it was innocent of them. It was then with the most painful astonishment that it believed (very mistakenly to be sure) it could see in the addresses which were spoken at Paris a disposition on the part of France to render England responsible for the attempt of the 14th, and to

hold her in suspicion. From that moment, public opinion in England, unanimous in stigmatising assassination, suddenly checked the demonstrations which were being made in every part of the country."

We repeat that it is a subject of congratulation for both countries, that the meetings of these provincial bodies in France afford opportunities of speaking "the words of truth and soberness," and that there are men who know how to use them so well as Count Persigny.

From The Press, 28 Aug.

M. DE PERSIGNY'S SPEECH.

THE speech—very remarkable in many respects—which has just been delivered by M. de Persigny, coupled with that which the French Emperor himself delivered in the presence of our Queen, ought, we think, to destroy in men's minds the idea which has unhappily taken hold of them—viz., that all that the Emperor and his supporters say and do to strengthen and improve the alliance with England is said and done with the secret intent of more effectually concealing the hostile designs which they cherish against us, and which they hope one day actively to develop, by some sudden invasion of this country. If Napoleon and his supporters really entertain any notions of this kind, the declarations which they make of a real desire to consolidate the friendship of the two nations appear to us a very awkward mode of preparing the way for the realization of their intentions. The Emperor must know, as well as we know, that if he be really making preparations for a sudden descent on the English coast (as many sensible (?) Englishmen are fully persuaded that he is making), those preparations could not be concealed from the vigilant eye of the British Government, by any hypocritical professions of a desire on the part of France and her Government to preserve the most friendly relations. Acts would be judged by their own character, and not by the words of the actors. We believe that M. de Persigny tells the truth, when he says that the amount of intercourse between France and England has grown to such an enormous degree that a war between the two countries would partake of the character of a civil war; and that ruin would be brought down, on some of the most important classes in both countries, by any warlike collision. That there are some excitable and restless spirits in both nations who might rejoice at such a conflict, we do not deny; but that the great mass of the French nation would look forward to it with eagerness (as some people affirm), is what we cannot bring ourselves to believe.

Those who charge the Emperor with hypo-

crisy cannot have it both ways. If the haters of England (who are said to constitute an overwhelming majority of Frenchmen) understand these professions as put forth to conceal a deep-laid scheme for an attack on England, and are *therefore* satisfied with them, then it can hardly be maintained that what all France sees so clearly is entirely hidden from English vision. Rather what France sees plainly, England will see plainly too. If, then, the Emperor's peaceful words are correctly interpreted, when this sense is put upon them, they do not answer their imputed purpose; they are simply barefaced falsehoods, which deceive nobody.

But, on the other hand, if the French nation take his professions in their literal sense, and if deadly hostility to England be *really* the ruling passion in their breasts, *then* it is quite clear that their belief in the sincerity of their ruler on this matter must create the most dangerous feelings against his person and dynasty. If, then, the veil be so transparent that all see through it, it does not answer its end; if it be so thick that it cannot be seen through, then it is fraught with alarming consequences to its wearer. We say, therefore, take these speeches which way you will, if the Emperor cherish a secret design to attack this country, it appears to us that he could not set about carrying out that design in a more awkward and ineffectual way, than by being lavish in professions of his desire to preserve friendly relations between the two nations, and by hypocritical civilities to the Queen of England.

At the same time confident as we feel that the French Ruler and the French people do not entertain these hostile designs, we by no means should counsel our rulers to neglect ordinary precautions. We by no means advocate the reduction of our means of defence to any thing like so low an ebb as to leave our shores in that defenceless state in which the Whig-Radical Administrations left them at the period when the late Duke of Wellington placed on record his protest against all absence of preparation to repel an enemy. But, fortunately for us, *aggression* requires a tenfold greater amount of preparation than *defensive* warfare. The armament which must sail from Cherbourg to effect a landing on our coasts might be thrown into hopeless confusion by one which did not amount to one-tenth of its strength. What constitutes the power and efficiency of an invading armament on land—viz., the soldiers, the horses, the artillery, the commissariat, &c.—constitutes its weakness at sea. We think that England ought always to be prepared at the shortest notice to equip such a force as would throw confusion into a hostile expedition, and would either prevent its attempt to land, or

would insure its annihilation in the attempt. Had the Russians thrown their Sebastopol fleet into the midst of the Anglo-French Crimean expedition, and had they opposed vigorously the landing, after their attack by sea, we do not believe that there is a military man of any authority but will acknowledge that that allied army never would have reached the Alma.

Now, there is one thing very certain, and that is, that England has no design of invading France. All that it is therefore necessary for England to do is to maintain always in readiness a sufficient force to assail and deal with a hostile armament, come it from what quarter it may. Fortunately, in the nature of things, as we have shown, that force need not be of any thing like the strength of the force which it would have to oppose, for no doubt there is a limit to the power, if not to the amount of an invading force: addition beyond a certain quantity does not add to, but detracts from, its efficiency; and its extent may be increased so as to become utterly unwieldy and unmanageable. Therefore the forces which England need maintain can give no umbrage to France, and can neither excite in her any alarm nor justify her in increasing her military and naval preparations. Thus that ruinous course of rivalry between the two countries—the augmentation of the armaments of one being made the pretext for the augmentation of the armaments of the other—ought to be wholly avoided; and the French Emperor, if he be as wise as we believe him to be, will spend the vast resources at his command in improving the condition of his people, and in great works of peace, rather than wasting them in unproductive works, and in constructing navies which he can never want for defence, and which assuredly will not serve him for aggression.

From The Press (D'Israeli's Organ).
OUR INDIAN POLICY.

WHEN we have reconquered India, there will remain a greater task behind in the question, How shall we govern it? What line of policy shall we henceforth pursue? What principles shall we determine to apply? This will be the rock on which India will be wrecked and lost, or the anchor by which she will be held fast and saved.

We have passed a "Bill for the Better Government of India." But the passing of a Bill, and the applying of principles, are two very different things. The Bill referred to rather provides the agencies than lays down the principles by which India is to be governed. Again we ask, then, What is the policy intended henceforth to be adopted in the government of our Indian empire? Is it to be the timid, no-principle, "traditionary pol-

icy," which has resulted in the late insurrection or mutiny? Or shall we henceforth adopt a bold, honest, decisive, Christian policy? These are important questions, pregnant with great issues either for good or for evil,—and if mooted at all, ought to be well weighed and soberly discussed. It is in no spirit of rashness or presumption we take them up, but with a sincere desire to contribute the small fractions of our own reasons towards their solution.

It will be only candid in us to confess at once that we strongly incline to the bolder policy as the wiser. We believe that timidity has been our trap, and that, now at least, the time for timidity has gone by. Hitherto we have ruled India by suzerainty,—henceforth, we must rule it as conquerors, or we shall not long be permitted to rule it at all. Such is our decided opinion.

But we shall be expected to give our reasons for coming to these conclusions. The first ground that we take is, that any other than a bold, unhesitating, authoritative system of government now will be liable to make us misunderstood by the natives—it will be interpreted into fear on our part. This will encourage to fresh conspiracies, to fresh combinations for our overthrow. But daunt them by our decision, awe them by the signs of our power, and they will crouch submission. There is nothing so impresses a Hindoo as *authority*. It is the ideal before which he has always bowed. He reverences nothing that does not wear the outward form and aspect of Despotism. It is the form of Despotism—not, of course, its spirit—we advocate for India. By a stern, prompt, decisive course of action in the Government at this crisis, the Mussulman will be overawed, the Hindoo will quietly acquiesce, and all the Native Princes will feel that they are under the rule of one who *must be obeyed*, and so will submit. A fearless course, then it is that will be far more likely than any other to have the effect of permanently *quieting* India.

Our second reason is, that it is in the nature of all Asiatics to despise moral weakness; to suspect treachery in others; to double upon duplicity. Any want of open, honest dealing on our part they will impute to some sinister design. They know us well enough now in our institutions, in our principles, in our religion, in our own country, to know what to expect of us. By attempting to impose upon them, we shall only impose upon ourselves. Our policy with them ought to be as open as the day. Any thing like mystery, or ambiguous expressions, or half avowals of our intentions, are specially to be avoided in our public action with such a people. Suspicion, distrust, cunning, weak artifice, are indigenous qualities in Asiatic minds. Such

minds always despise those most who exhibit the same infirmities as themselves. All weak nations, indeed, as women, are best controlled by, because they most respect, the strong and manly qualities of frankness and decision. We must teach our Indian subjects to trust us; and to teach them to trust us, we must have the manliness to be perfectly *truthful*.

There is a third ground—and obviously by itself a sufficient one—on which we advocate a bold course, and that is, because a different policy has failed, and always, we believe, will fail in India; whereas a bold course has in repeated instances succeeded. In proof of this we have only to call to mind what Clive, and Duncan, and Bentinck, and Napier, and other worthies of past days, achieved by daring yet prudent action; or what Lawrence, and Edwards, and Montgomery, have accomplished in the way of government lately, without any suppression of their Christianity. Would Bengal be now a British province if Clive had faltered? Would infanticide have been put a stop to if Duncan had listened to pleas for respect to age-long prejudices? Would Sutteeism have been put down if Bentinck had been deterred by the threat of insurrection? What brought Scinde so soon into subjection but Napier's sternness? Would the Punjab be still our quiet possession if Sir John Lawrence had exhibited indecision? But what is most worthy of remark is, that almost all of these governors innovated upon the *religion* of the natives; they more or less abandoned a dishonest "neutrality," and made the religious principles of England to be the governing religious principles of India. The fear, then, that a bold avowal of our Christianity would risk the loss of India appears to be only the bugbear raised up by our own unbelief. A Christian system of government—that is, a system of government based upon Christian principles—is what we ought to resolve now to establish in India.

But we shall be expected to explain more fully what we mean by a Christian system of government. This we will endeavor to do.

First, the *Queen of England* is, we presume, to be proclaimed as the *Queen or Empress of Hindostan*. Let this be in her *Christian*, and not merely in her *Sovereign* capacity; that is, let the proclamation run, "*Her Christian Majesty, the Queen of Great Britain*, hereby makes it known to her Indian subjects, &c."

Second, as to the principles of government that shall be avowed, let it be declared that the moral law of England shall henceforth be the moral law of India—that is, in all questions of crime, or of social right, or of justice between man and man, or of civil order, or of religious toleration, let the same principles be

applied to India as are applied to England. By thus establishing the law of England, the question (one of extreme difficulty if timidly dealt with) of the public recognition, within the provinces under our sway, of Hindooism or of Mahometanism, as the State religions, would be indirectly yet decisively resolved. All open demonstrations of idolatrous worship, as of Popery in our own country, in the forms of public processions, licentious festivals, and indecent exhibitions, would become unlawful, and would in due time cease. It is not the *compulsory* adoption of Christianity, be it observed, or the adoption of Christianity at all, except upon conviction, that we advocate, but only the State patronage of Christianity, so far as regards Government approval. To attempt to make converts of the natives by force or by fraud would indeed be as futile as it would be foolish. Let it be distinctly proclaimed that it is no part of Christianity to propagate itself by the arm of power; that it has respect to the rights and feelings of all men, and will constrain none: that it will impartially protect all, while it can patronize no religion but its own. Such a policy as this the natives would understand, and, we believe, appreciate, because it would be *honest*. They will never believe us if we profess absolute neutrality, or adopt a reverse line of policy, in what may be termed *political coquetry*. We cannot help thinking, too, that it would add greatly to our influence if, instead of a Governor-General, a *Viceroy* were appointed, to be aided by a local Council, presided over by a Lord Chancellor as the highest legal adviser. The pomp, and splendor, and ceremonious circumstance of a *Viceroyal* Court—representing to Eastern eyes the majesty of the absent Sovereign—would have a prodigious effect upon the Asiatic imagination, and tend powerfully to secure contented submission.

The bold policy which we advocate will however, involve something more than negatives. Schools and colleges, for the inculcation of sound knowledge and correct morals, should everywhere be established, gradually and quietly, to do their silent work of sapping and undermining the superstitions of the natives. The attendance at these should, of course, be quite voluntary;—neither bribery nor force should be resorted to. The State should here act the Parent rather than the Ruler. This would, in the end, be the most truly merciful course. It could not be charged with injustice, even if instruction in the Christian religion were added, since, by universal law, the conqueror has the right to impose his own terms upon the conquered. It amazes us at their stupidity, to hear statesmen, who advocate "neutrality," contending, at one and the same time, for the introduc-

tion of European science, and for the exclusion of European religion. Our science, by their own showing, is just as much inimical to Hindooism as our religion: if then we introduce the one, in the name of Reason why not, under the same conditions, introduce the other? It will be answered, perhaps, that Hindoos and the Mahomedans are opposed to our religion, and not to our science. To the Christian religion, as the *Christian religion*, they may be opposed, but would they be opposed to it if we taught it simply as a science, by making the Bible a regular school-book? That the people of India generally would, there never yet has been produced any proof. The testimony of all those who have had to do with schools in India is the other way.

To the work of establishing and aiding schools, then, the Government might very safely direct its efforts. We do not plead now for a Church Establishment—the time for that has not yet come—beyond the gradually adding to that which is already in the country, as it grows in extent, either from the addition of converts, or of resident English people. Let the Church of England carry on the work independently, under the protection, but without the active assistance of the State. This is all we ask at present.

There is one argument in favor of this course, taken as a whole, which, to our minds, has great weight. Christianity has been confided to England's imperial mission. True religion, it may be assumed, is the final purpose of society; and if this be so, it may equally be assumed that no State can stand that has not the essential elements of true religion for its basis. Practically, indeed, this is found to be the security of States. Man is a religious animal; he cannot exist socially without some faith; and if you undermine even his false faith by an infidel system of instruction (which is what has been done hitherto in India), and give him no other religion in its place, you convert him into a fiend instead of a man. To quote the words of the witty South, "He who will fight the devil with his own weapons must not wonder if he finds himself overmatched." We have been overmatched in this way in India. And we shall prove ourselves most thorough fools, if the same kind of policy is to be followed, and we learn nothing from our own folly. God in his providence has swept away, in the north-west provinces of India at least, with the native dynasties, the gigantic fabric of the native superstitions, so far as our obligation to uphold them was concerned. By the revolt of their native sovereigns He has freed us from our treaties with them. Is it to be supposed that He has swept these away only that we may re-erect the very same system?

There is intense moral absurdity involved in the supposition. His own Providence plainly points out our future duty. If now we show that we have confidence in our own religion, the natives will have confidence in it too; but we shall never induce their belief in it by exhibiting our own want of faith. To govern India henceforth as Christian men, and with Christian objects, ought to be our unhesitating purpose; nor ought we to rest content till Christianity has established itself as the religion of our whole Indian empire.

How far there may be obstacles in existing treaties to the breaking off at once of Government support to native temples in some provinces, or to their taking direct steps to diffuse sound instruction among the people, we pretend not to know. But we would suggest that there can be no such obstacles *now* in some of the north-west provinces of India; and if the Government are afraid to attempt a better system on a large scale, let them experiment it on a smaller, in some one of those north-west provinces—say Delhi—and keep such a strong military force there as will effectually awe down any *éméute*: One trial like this may solve the whole question, and prove that our fears have no foundation.

It is not for us, however, to advise what measures shall be taken. We can only express our regret that such doubtful sentiments as those that fell from Lord Stanley, the first Secretary of State for India, should have been uttered to a Deputation who waited upon him lately to learn what were his views and intentions in respect to Christianity, in connection with the future government of India. He laid it down that "no steps should be taken, directly or indirectly, to give to the opinions of Europe an apparent preference over those which were found existing in the country." Upon this principle, we make bold to say, he must give up the government of India altogether, unless he can transmute himself at once into an Indian, with all his feelings and notions. Quite inconsistently, however, he argued in favor of giving an actual preference to European science in the instruction of the natives, than which nothing could give a more direct practical preference to European opinions. By the mere teaching you give a preference. And this practical difficulty will meet us at every turn. We must either teach our Indian fellow-subjects nothing, or we must teach them, as far as they will receive it, all that we know and believe to be for their good, or we must abandon, as a palpable lie, our professions of "neutrality." Lord Stanley admits that we are to carry out our own principles against and in spite of the natives, where their "ideas come into collision with the universal and everlasting rules of justice." But whence do

we derive our different "rules of justice" but from our religion? Lord Stanley's language savored more of the French philosophy of the last century than of the true philosophy of Christianity. That a young statesman of such undoubted ability and rising eminence should have so expressed himself is, we repeat again, matter for sincere regret, especially as he is now the Chief Minister for India.

Our trust for India, however, lies chiefly, under God, in the Council for India that is to advise and act with the Minister. If such men as Sir John Lawrence, as is reported, and if others who are named, are to form the Council, we shall have confidence that their policy will be wise—bold, yet not rash—prudent, yet courageous—temperate, yet decided. We would almost pledge ourselves, indeed, to Sir J. Lawrence's policy alone, and to renounce all that we have here advanced, if he thought it unwise, such confidence have we in his sagacity and administrative ability. And there is another gentleman named for the Council, upon whom, though he has had no Indian experience, we can place the utmost reliance. We allude to Mr. G. A. Hamilton the senior Member for the University of Dublin—a man not only of high Christian feeling and moral courage, but of the soundest practical judgment. The actual policy for India must necessarily be practically determined by the new Council. As they advise, so the Minister, whoever he may be, must mainly act. And with such men in the Council as those we have named we feel that we may have hope of a bright era yet for India.

From The Press.

THE LUNACY QUESTION.

THERE is something so horrible and dreadful in the notion of a sane human being actually being shut up in a lunatic asylum, that it is no wonder, when there seems good ground to fear that such events do take place, that an alarm should be created, and that the most stringent measures should be called for to prevent the recurrence, or continuance of similar cruelties. It is well that thus it should be, and we are glad, therefore, to see that the public mind is aroused to the necessity of a more vigilant inspection being established over private asylums.

The cases of alleged lunacy which have recently appeared in the newspapers, coupled with certain admissions from the Commissioners of Lunacy, which *prima facie*, until explained, appear to imply considerable dereliction of duty on their part, evidently call for some change in the existing system; but at the same time great care should be taken not to rush into an opposite extreme, which may be productive of great public mischief.

The difficulty of placing restraint upon persons who are really insane is, we believe, at present greater than it ought to be, and in conformation of this opinion we appeal to the constant reports contained in the newspapers of deeds of horror which are perpetrated by madmen who have been left in possession of their liberty, and the numberless suicides which the coroners inquests return as done by persons who are insane. These events prove, at any rate, that if some persons who ought to be free are confined, yet that numbers of persons, who are allowed to go free ought to have been subjected to restraint.

Now, we loathe and condemn, as strongly as any one, the conduct of those, who, taking advantage of their position as relatives, for their own ends, consign an unhappy individual, who is really sane, to the walls of a lunatic asylum. It is, perhaps, more than anything else calculated to drive a man mad; and if our contemporaries were only directing their energies to cause measures to be taken to prevent so monstrous and fearful an outrage being ever again committed, or prolonged, we should have not one word of caution to say against the tone and object of their articles.

But it appears to us that, by the cry which some of them are raising against private asylums, and by the obstacles which they would raise to the imposing restraint upon any person, they are running the risk of creating a far greater evil than the one which they are desirous of remedying; for, if the amount of human suffering now arising from the improper confinement of sane persons were to be weighed with the amount of suffering occasioned by the liberty possessed by insane persons, it would probably be found that the suffering arising from the latter cause is twenty-fold greater than that arising from the former: for, even under the present law, and its admitted defective administration, the difficulty of placing restraint—arising from the unwillingness of friends and relations to have recourse to so extreme a measure, and their ignorance how to set about it—is so great that hundreds, more probably *thousands*, of persons who ought to be restrained are at full liberty, to the great danger of their own lives, and those of their families, and neighbors.

When a neighborhood has been horrified by some frightful catastrophe, there is no lack of persons to cry shame on the relatives of the unhappy being, whose frenzy occasioned it. They are condemned for having shrunk from the discharge of a disagreeable duty, and for having preferred the chance of an awful crime being committed to incurring the responsibility of preventing it. How many families are there at this present moment, where the wretched wife and children lie in daily

dread of some murderous assault on themselves, or of the realization of suicidal propensities? If the relatives of the criminal lunatics now in Bedlam had done their duty, many a valuable life would have been spared.

We therefore deliberately affirm that we believe so far from its being advisable to increase the difficulties of placing restraint on half, or wholly insane individuals, increased facilities, if possible, should be given in order to enable it to be done. None but those who have passed through the ordeal can tell the fearful amount of terror, and anxiety, which a family has to go through, from the first indications of the complaint, till its complete establishment admits of no doubt. There are few individuals, not in their right mind, who are not capable of talking on various subjects with the most perfect sanity and calmness. The intellectual powers of insane persons are not unfrequently greater than they were before their calamity came upon them: and persons whom their own family know perfectly well to be insane will conduct themselves towards acquaintances as sanely and agreeably as ever.

Now one of the demands which is being made is to give more publicity to cases of insanity. The effect of so doing will be most disastrous, both to the sufferer and to his family. Every professional man, who has to

deal with the malady, will tell you that the chances of recovery mainly depend upon early treatment of the case. If the friends of a person know that they can only cause him to be subject to medical treatment, at the expense of his being, for ever after, publicly branded, as having been insane, how much more will they shrink from the early measures necessary for his restoration than they do at present? How long will it be before an affectionate wife, or parent, or child will bring themselves to take the fatal step which shall fix forever a *public* brand upon the husband, the child, or the parent? and yet by the delay the evil day may be only postponed, at the same time destroying the best chance of recovery.

These are considerations of the most important nature, which, in dealing with so distressing and delicate a subject, should never be lost sight of; and in amending the present system, which the recent cases render imperative, care ought to be taken, in providing against its abuse, not to create other evils of as bad a character as those which it is sought to remedy. A more strict and efficient supervision of private asylums is what ought to be secured, but against the cruelty, both to the sufferer and to his family, of unnecessary publicity, we here emphatically protest.

BRIDE-WAINS AND BIRTH-CAKES.—From a very interesting paper called *Ancient Customs and Superstitions in Cumberland*, read before the Historic Society of Lancashire and Cheshire, by Mr. Craig Gibson, we learn how it was possible to marry upon less than "three hundred a year" in the Lake country. "The sports at these bride-wains were racing—by horses, donkeys, and men—wrestling, fencing, leaping, and other athletic games, of which the Cumbrians have always been passionately fond, and in which they still excel. After the ceremony, these, with eating, drinking, and, of course, dancing, filled up the day and night; but the characteristic feature of these meetings was the manner of carrying out the object for which they were drawn together. The bride, seating herself in some conspicuous situation where she would be passed and seen by all the multitude of guests—say, on their way to or from the refreshment-tables—with a large wooden platter or pewter dish in her lap, invited contributions from all and sundry. All contributed according to their means, and many very liberally; so that when the expenses were paid, a sum would remain sufficient to enable the parties interested

to make a respectable start in housekeeping." Nor were these couples so poor, it seems, but that they entertained their neighbors upon occasions of importance. "After marriages, we legitimately come to the customs connected with births. Of these, the only one I have remarked as being confined to Cumberland, is the fashion of making, for the regalement of gossips and callers, a compound called room, or rum, butter; I am not certain which name is correct. It is a concoction of butter, sugar, spirits, and spices; and when eaten in the orthodox manner, with crisp oaten cake, is not so disagreeable as might be supposed. The quantity consumed in some country-houses, after the arrival of each little stranger, is something quite wonderful, especially in the more thinly peopled localities, where, as would scarcely be surmised, the number of congratulatory visitors is always the greatest. The humble dwelling in one of the fell dales of a worthy clergyman who has reared twenty-one children on an annual income of less than £70, has witnessed the preparation and consumption of forty-two stones of this Cumbrian dainty, or twenty-eight pounds at the birth of each child."

From The Examiner.

Christianity in China, Tartary, and Thibet.

By M. L'Abbé Huc, formerly Missionary Apostolic in China. Vol. III. From the Establishment of the Mantchoo-Tartar Dynasty to the Commencement of the Eighteenth Century. Longman and Co.

THE opening of China to our merchants and our missionaries gives new interest to all the works of M. Huc, and perhaps interest of an especial kind to the last published volume of his Christianity in China. The substance of that volume is the story of the famous Emperor Khang-Hi in his relation to the missionaries from the West; it is the history of a great opportunity for the extension of Christianity in China destroyed by the contentions among Christians. The point in dispute was the observance of certain Rites—ceremonies in honor of ancestors and of Confucius—by Christian converts. The Chinese literati declared these rites to be a civil institution, passing as acts of worship only with the ignorant. If the abolition of such customs of the country was to be co-extensive with the spread of conversion, then the progress of the missionary would be difficult and slow. If converts were allowed to perform the rites upon condition of their distinct knowledge that they did so as Chinese citizens, and not as worshippers, then they were a nation very open to receive the doctrine of the stranger. The hold upon the mind of the Emperor, won by the science of Father Verbiest, opened an easy way for the religious teaching of the Jesuits, who gladly accepting the assurance of the men who should know best, that they meant no worship by the rites before the tablets of the dead, quietly steered round the rock ahead.

Then came the less pliant Dominicans, declaring that it was due to conscience to sail through the rock. The Jesuits established at the Court of Pekin sent to Rome the Emperor's decision that the rites were civil and ceremonious; the Dominicans caused to be sent from Rome to Pekin the Pope's decision that they were idolatrous: Emperor and Pope were thus brought into a collision, and by the shock of it the missionaries were cast out of China. Infallible decisions from the see of Rome came to Pekin, first suffering the rites, then interdicting them, then suffering and interdicting in one breath, leaving them to be observed in one sense by those who observed

them, and rejected in another sense by those who rejected them. Then they were forbidden in a Papal bull, and allowed provisionally in eight permissions by the bearer of the bull. Then they were bluntly denounced, and it was forbidden to the Chinese converts, in speech or inscription, to call the Supreme Being, in accordance with the spirit of their language, "Heaven." Now the Emperor had contributed largely towards the building of a beautiful Christian church in the immediate neighborhood of its palace, and had himself provided three pious inscriptions for its walls, one of them containing the obnoxious word which a nice bigotry could interpret into worship of the sky. The tablet given and inscribed by the Emperor was therefore to be taken down. Again, though the Jesuits had begun their zealous labor of conversion, wisely tolerant of small things that they could not alter till the greater things they had in view were done, it is certain that they had no tolerance for brother missionaries, who, as it seemed, were meddling with their harvest and imperilling the fruit of all their labor. By open attack, by secret antagonism that rendered fruitless the exertion of all hostile legates, and by an obstinate resistance to the will of the Pope,—until it was at last, after the ruin of the Chinese mission, expressed with the utmost emphasis, and supported by penalty of the greater excommunication,—the Jesuits begot in China a dissension that grew bitter throughout Catholic Europe.

The Jansenists in France triumphed over their enemies the Jesuits as rejectors of the Bull *ex illâ die*; and the Emperor of China was so well instructed that he twitted a Pope's legate with allusion to the Jansenists of France who were rejecting the bull *Unigenitus*.

The Chinese Emperor Khang-Hi, whose energy riveted the power of the Tartar dynasty, is well known in Europe through the writings of the Jesuits established at his Court. He was often likened to his contemporary Louis XIV., and the Abbé Huc observes that as Louis has been called by Mirabeau the most oriental King of the West, so may it be said of Khang-Hi that he was the most Western King of the East. There was no man of his nation equal to him in ability, he was free from religious prejudices, being like all his countrymen, Tartar or Chinese, indifferent to matters that relate to any other

world than this. The science of the Christians he appreciated, and it was by their practical knowledge of astronomy, mathematics, and mechanics that they won his favor. The materialist way of thinking common among the Chinese M. Hue thus incidentally illustrates:

"The Chinese have, in general, so much precocity of judgment and intelligence, that they are capable of attending to serious business at an age when European children think only of play; and though somewhat inclined to moroseness and melancholy, the juvenile inhabitants of the Celestial Empire are early accustomed to the realities of life. The children of the great towns soon learn to understand commercial affairs, industrial speculations, and, moreover, all the knaveries of stock-jobbing; and the children of the country know perfectly well how much a field of rice will produce, and calculate as well as any grown men the profits derivable from the culture of the mulberry or the tea plant. These little materialists appear to have somewhat withered hearts, and are by no means remarkable for candor and simplicity; they have seldom any aspirations towards generous ideas or noble sentiments, and one may see in the very look of their narrow oblique little eyes the indications of roguery, cupidity, and cunning."

Khang-Hi being convinced by a few simple and striking experiments that Father Verbiest knew more about astronomy than the Chinese Head Astronomer, after careful and repeated trial of his skill, placed him at the head of the astronomical department. Then although the barbarian discovered that a whole month solemnly announced already in the next year's calendar, which had been sent to kings and tributary princes, must be cancelled, the Emperor, wiser than all his advisers, would not maintain the false honor of the state at the expense of scientific truth, and by an edict struck the month out of the year. He received Father Verbiest as his tutor, setting aside all the tremendous ceremony of his throne, he sat at one table with him nearly all day long for months together, working at astronomy and Euclid. Father Verbiest made new astronomical instruments for the observatory; he turned cannon founder, and enabled his patron to subdue with bombs bearing the names of Catholic saints a revolt perilous to the Tartar dynasty. Emperor and priest were both men of intense energy. The Jesuit gave a life's toil to that temporal service of the Emperor by which he was to

win ready access for the missionary to his empire; he toiled also at the work of the missions. He wrote books of science in Chinese.

"Father Verbiest was assuredly one of the most illustrious of those ancient missionaries of Pekin, whose zeal, virtue, and knowledge shed so much glory on the religion and order of the Jesuits. He possessed a wonderful facility of acquirement, and so much industry, that the amount of scientific labors that he got through, in addition to all the duties of his ministry, is all but incredible. Not to speak of his voluminous correspondence he has left more than thirty works, some of which are of the most extensive and elaborate kind, and he was, nevertheless, almost continually occupied at the court, either in giving lessons to the Emperor, or in executing various works useful in themselves or calculated to excite the curiosity of the mandarins. He seems to have been familiar with all that was most rare and ingenious in the arts and sciences of the time, and even in some instances to have gone far beyond his age, and it is highly probable that he anticipated the great discovery of modern times, the motive power of steam.

"In his learned work, entitled *Astronomia Europæa*, there is a curious account of some experiments that he made at Pekin, with what we may call steam-engines. He placed an *æolipile* upon a car, and directed the steam generated within it upon a wheel to which four wings were attached; the motion thus produced was communicated by gearing to the wheel of the car. The machine continued to move with great velocity as long as the steam lasted, and by means of a kind of helm it could be turned in various directions."

"An experiment was made with the same instrument applied to a small ship and with no less success; and Father Verbiest, after giving an account of these experiments, adds these very remarkable words:—*Dato hoc principio motus multa alia excogitari facile est.*

"Who knows whether the first locomotive and the first steam-boat may not have performed their functions in the gardens of the Imperial palace at Pekin."

The original works of Father Verbiest's pupil, the Emperor Khang-Hi, are in the royal library at Paris, where they form a collection of a hundred volumes. He also caused many important literary works, such as a Chinese Mantchoo dictionary, and a great Atlas, the work of the missionaries, to be executed in his reign. M. Hue speaks of the Atlas, we may observe, without guarding his readers against the impression that the Chinese then learnt their own geography from Europeans.

Father Amiot has shown that the most ancient piece of geography in the world, out of the Pentateuch, is a Chinese account of China in the time of Yao and Chun; that eleven centuries before the Christian era local mandarins had to supply detailed maps of their districts, verified and corrected annually; that founders of new dynasties in China have always laid stress on the securing of a good set of maps of their dominions; that the first thing done with newly-conquered ground has always been to map it. An excellent Chinese geography of the time of the Ming dynasty, with maps of all the provinces, is in the Paris Royal Library, of which the "Atlas senensis" of Martini, published before the missionary map was made, had been only a translation and reduction. The missionaries mapped the country by the aid of European science, but the purpose of their mapping was not to teach a new art to China, but to give the Emperor special information as to the condition in which the lands of his dominions had been left by the great dynastic struggle.

Our author quotes from one of the missionaries this description of the person of Khang-Hi:

"The Emperor appears to be above the middle height, more fleshy than what are considered fine men in Europe, but rather less so than a Chinese desires to be. His face is full, but marked with the small pox; his forehead broad; his eyes and nose small like those of most of the Chinese; the mouth handsome; and the lower part of the face very agreeable. His manners are gracious; but there is nevertheless a certain air about him that indicates a habit of command, and shows the master. We left his apartment to enter another, paved with marble and tolerably clean, where an officer of the palace, after having had tea served to us, presented us, on the part of the Emperor, with about a hundred ounces of silver."

After Verbiest's death there were five French missionaries and mathematicians who had landed on his coast honorably conveyed to Peking, whence three were allowed to depart into the provinces, while two were retained to enlarge the knowledge of the Son of Heaven. If the Emperor retired out of the city he would not retire from study, and his teachers rose at four in the morning that they might present themselves in good time to assist over the lessons. Sixty years rule of such a sovereign, had Christians been

united, might have established Christianity in China; but the missionary cause was ruined when he died. The son who succeeded him was a just and wise prince, of whom missionaries honestly report the solicitude to do that which was right, nevertheless he razed the churches and expelled the preachers of the word that seemed to be the word of strife.

M. Huc tells his tale with much impartiality, of course in the spirit of a good Roman Catholic, who binds himself by the decision of a Pope. His new volume contains a single episode in history, and is in itself complete. Nowhere else is this important narrative of church dissension told at the same time so fully and so fairly. Of course the book is enlivened throughout by the author's natural vivacity of manner, and by suggestions of his own experience in China. We may quote as an agreeable example his illustration of part of an account of the voyage of the five French missionaries from Siam to Ning-po on board a Chinese junk. Father le Comte is the first speaker.

"There is not a nation in the world more superstitious than the Chinese; they pay divine honor even to the compass of their vessel, burning little sticks of perfume continually before it, and offering it meats as a sacrifice. Twice a day they regularly throw some pieces of their gilt paper money into the sea, as if to engage it in their service, and hinder it by that means from rising against them. Sometimes they would throw in also little gondolas made of the same material, in order that, being busy in overthrowing and swallowing up these little vessels, it might be induced to spare ours.

"But when, notwithstanding all these precautions, the spirit of the sea would grow angry, and become violently agitated, a different plan was adopted; a large quantity of feathers were heaped on the fire, that their smoke and bad smell poisoning the air might drive away the spirit, as it certainly would have done if he could have smelt it.

"The various customs mentioned by Father le Comte, are still in vogue on board the Chinese junks, whenever bad weather is apprehended, and it is really curious to observe how the cunning and trickery so common in China are manifested also in their religious practices. The devotion of the Chinese appears often to consist in deceiving their gods by some artifice, doing them ill turns, and catching them in a trap from which they cannot extricate themselves.

"If a storm is very violent, they say the spirit of the sea wants to swallow the ship for a prey, and then the captain, instead of

animating the courage of his sailors and manœuvring the ship in the best way he can, cunningly gives orders to make a miniature ship to deceive the wrathful spirit, and the crew sets to work with an incredible mixture of simplicity and knavery. Nothing is omitted to render the deception complete; the little junk has its masts, its cordage, its sails, its flags, compass, rudder, boat, arms, even its cooking utensils, provisions and merchandise, down to the very account books, with as many paper figures as there are of

real men on board. When this absurd and disgraceful lie is complete, the Chinese physiognomies expand into cunning smiles at the success of the artifice. Then the tam-tams and tamborines sound, fireworks are let off, and the little mock ship is thrown overboard with a thousand imprecations, and in the midst of the most deafening clamor; all eyes follow it with anxiety, and as soon as it is swallowed by the waves, the crew burst into shouts of laughter, and rejoice to think how nicely they have tricked the spirit of the sea.

BISHOP SANDERSON'S INMOST THOUGHTS.—

But since I have thus adventured to unbowel myself, and to lay open the very inmost thoughts of my heart in this sad business before God and the world; I shall hope to find so much charity from all my Christian brethren as to show me my error, if in any thing I have now said I be mistaken, that I may retract it; and to pardon those excesses in *modo loquendi*, if they can observe any such, which might possibly, whilst I was passionately intent upon the matter, unawares drop from my pen; civilities which we mutually owe one to another, *damus hanc veniam, petimusque vicissim*, considering how hard a thing it is, amid so many passions and infirmities as our corrupt nature is subject to, to do or say all that is needful in a weighty business, and not in something or other to over-say and over-do; yet this I can say in sincerity of my heart and with comfort, that my desire was (the nature of the business considered) both to speak as plain, and to offend as little as might be.—*Preface to Sermons.*

WANT OF THE BIBLE IN PARIS.—During the peace of Amiens, a committee of English gentlemen went over to Paris for the purpose of taking steps to supply the French with the Bible in their own language. Of this committee Mr. H. (Hardcastle) was one, and he assured me that the fact which was published was literally true—that they searched Paris for several days before a single Bible could be found.—*Silliman's Travels.*

RELIGIOUS IMPROVEMENT.—In a dialogue or familiar talk by Michael Wood, 1554, it is said, "Who could twenty years ago say the Lord's prayer in English? Who could tell any one article of his faith? Who had once heard of any of the Ten Commandments? Who wist

what Catechism meant? Who understood any point of the holy baptism? If we were sick of the pestilence we ran to St. Rooke, if of the ague to St. Pernel, or Master John Shrone. If men were in prison they prayed to St. Leonard. If the Welshman would have a purse he prayed to Darvel Gathorne. If a wife were weary of her husband, she offered oats at Poules, at London to St. Uncumber."—*Wordsworth's Ecc. Biog.*

WOMAN'S TEARS.—What women would do if they could not cry, nobody knows. They are treated badly enough as it is; but if they could not cry when they liked, how they would be put upon—what poor defenceless creatures they would be! Nature has been very kind to them. Next to the rhinoceros, there is nothing in the world armed like a woman. And she knows it.—*Jerrold.*

At a distribution of prizes at the Sorbonne, in Paris, among the colleges belonging to the University, one of the three principal, that of Latin composition, was awarded to a mulatto youth, a native of Hayti; and the first of Greek composition to another Haytian, quite black. A Catholic missionary lately sailed from Marseilles for Tripoli and Bengazi, to commence establishments for training blacks as missionaries in the Soudan.

CLERICAL BOREDOM.—The Abbé Domenech, in his record of priestly experiences in Texas, describes how he drove his errant congregation from his garden into his church by letting a wild boar loose in the garden. Our incumbents too often prefer the opposite course, and drive their congregations from the Church into the garden, by letting loose a tame bore in the church.—*Punch.*